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# AMERICAN BUILDER

and Building Age

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## MARCH, 1938

60th Year

Vol. 60—No. 3

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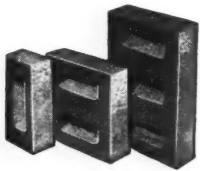
# Proven OPPORTUNITY

## 3 MILLION DUNBRIK

### SOLD FIRST YEAR

You will realize after reading Mr. Rose's letter what an outstanding local manufacturing business he has established in one year in the small city of Goldsboro, N. C. His production costs and selling prices prove the excellent earning power of DUNBRIK Line-production Plant.

Mr. Rose's success is but one example. Let us tell you too about the many other successful DUNBRIK Manufacturers in this and foreign countries.



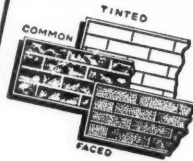
How their business is exclusive, protected by franchise.

How the wonderful Line-production DUNBRIK Machine turns out superior products at lowest cost. Why DUNBRIK offers permanent, air-cell insulation and hollow wall construction at the cost level of frame, and how it can be supplied in a wider range of colors than any other masonry material.

Write today for the new book "4 Keys to Success" just off the press. For you too it may mean success and manufacturing independence just as it has for Mr. Rose. Do it now while your territory is still open.



W. E. DUNN MFG. CO. 450 W. 24<sup>TH</sup> ST., HOLLAND, MICH.



**W. P. ROSE BUILDERS SUPPLY**  
(INCORPORATED)  
MANUFACTURERS OF  
**Dunbrik and Dunstone**  
GOLDSBORO, N. C.



MR. W. P. ROSE

W. E. Dunn Mfg. Co.,  
Holland, Mich.  
Gentlemen:

Dec. 21, 1937.

I am pleased to give you the cost of manufacturing Dunbrik stacked on the yard ready for delivery, as follows:

1250# Fine Sand	
1250# Coarse "	
1250# Pea Gravel	
3750# Net aggregate cost	\$1.50
5 Bags Cement @ 60¢	3.00
Labor per M	1.10
Power (Electric)	.10
Plant Overhead	.30
Total	\$6.00

The above estimate is based on 1000 brick. When we use steam for curing it adds to the cost 25¢ per M. This, however, is not necessary, only when the mean temperature is below 70 degrees.

Our sales for the first year amounted to three million brick. Our annual capacity, if the plant is run regularly, will amount to three and one half million brick.

Our Dunbrik retail F.O.B. Plant at \$12.50 per M, and our customers are our very best salesmen.

We have here a clay brick plant that can turn out 100 million brick annually and has been in business for twenty-five years. Yet we have found a ready sale for our product and we know of no dissatisfied customers.

Yours very truly,

*W. P. Rose*



# PUBLISHER'S PAGE

## Concerning "Economic Balance"

**P**RESIDENT ROOSEVELT was right in emphasizing recently the importance of sound balance between the prices of different industries. If the prices of some large industries are too low compared with the prices of others, the former and their employees will have too little purchasing power to be good markets for the products of the latter and their employees.

But there is an equally important kind of balance the necessity for which is usually ignored. This is balance between *the various demands made upon the gross earnings of each industry*. Every company or industry has to pay prices to other industries for goods or materials; to pay wages to labor; to pay taxes to government; and to *make profits* in order to carry on. It will become unable to carry on if the prices asked by other industries are too high. But it will also become unable to carry on if the hourly wages or taxes it is required to pay are too high.

**R**ESTORATION and maintenance of sound relations between the prices of all large industries is, as the President says, essential to recovery and prosperity. But so is the restoration of sound economic relations between the *total income* and the *total outgo* of each well-managed company or industry. The difference between them is either profits or losses. *It must be profits* if the company or industry is to contribute toward national recovery.

No contractor will erect a building unless confident of a *profit*. No manufacturer will make building materials unless confident of a *profit*. Nobody will invest in building a home for himself unless confident he will make a *profit* by owning instead of renting. No company will build houses or apartments to rent unless con-

fident the rentals will exceed the cost of owning, and thus yield a *profit*.

The *only* reason why total business and employment never fully recovered, and the recent severe recession occurred, is that *profits* in many companies and industries, and *confidence in future profits*, never fully recovered. This prevented the huge increase of investment in buildings and other "durable-capital goods" that otherwise would have been made, and the payment of billions of dollars a year in wages to the millions of men who otherwise would have been employed. If the *investment of capital* had recovered, we would have had full recovery of business and of employment, instead of the present severe recession and great unemployment.

**H**OW, then, restore confidence in profits, and thereby revive investment of capital? (1) Stop increasing taxes on property and business, and *reduce* them. (2) Stop attacking business to curtail profits, and recognize that without reasonable profits no business can even carry on, much less expand. (3) Stop fixing, or even maintaining, *hourly* wages that force costs in industry so high that increased investment in building and production cannot be made with confidence of increased profits.

We have tried *with complete failure* to cause recovery because we have tried policies ignoring the immutable economic fact that not only reasonable prices and reasonable wages, but also *reasonable profits in every industry*, are essential to prosperity and full employment.

*Samuel O. Dunn*



## WHY PAY A 'HIDDEN TAX' ON CONCRETE?

**I**T'S an old story, but maybe you never stopped to look at it this way: Forms are built, set, filled with concrete. Then the job stands still, waiting for concrete to become self-supporting, before forms can be stripped and re-assembled for the next pour. Either that, or you have to lay out money for more forms. Otherwise, wasted time eats up your profit; for time costs money—more than most people realize, until they stop to figure it out. Something like a "hidden tax" on concrete.

Fact is that by saving time you reduce costs; provided, of course, that the value of the time saved exceeds the cost of saving it. Lone Star's new book, "Cutting Concrete Costs," provides a quick, easy way of figuring the lowest-

cost concreting schedule—that is to say, the schedule which gives you the lowest overall cost of time, forms and cement. Contractors' own cost figures show savings of 38¢ to \$1.49 a cu. yd. with this method.

On some jobs, 'Incor' 24-Hour Cement, which provides dependable overnight service strength, shows you the lowest overall cost; on others, Lone Star Cement is the better buy. Chances are you can save real money by estimating with both cements. And both Lone Star and 'Incor'\* give an important plus value in greater workability, minimum placing costs, and better-looking finished work. Write for copy of "Cutting Concrete Costs."

Lone Star Cement Corporation, Room 2225, 342 Madison Avenue, New York, N. Y. \*Reg. U. S. Pat. Off.

# LONE STAR CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT... 'INCOR' 24-HOUR CEMENT

# AMERICAN BUILDER

## AND BUILDING AGE

### Brass Hats and the "Recession"

**T**HERE is a curiously contradictory state of mind apparent in the building field today. The Brass Hats at the top have been tightening budgets, talking each other into gloomier and more gloomy states of mind, and, what is worse, issuing melancholy statements that are broadcast in the press and radio.

But the rank and file contractors, builders, lumber dealers and salesmen out on the firing line are nowhere near so gloomy. Lumber dealers have been flocking to conventions in unprecedented numbers. Some of the biggest conventions in history have been held, with dealers everywhere displaying enthusiasm and confidence in the future.

Sales of plan books, calendars and advertising materials have been running far ahead of 1937.

Builders, large and small, throughout the country are optimistically working on plans for new homes and for housing projects, confident that with the new National Housing Act amendments in operation and with good weather ahead, they will have a lively and active market for new homes.

Salesmen of many of the large building manufacturing firms have come into the home offices for sales meetings, full of enthusiasm and reasonably optimistic about their prospects for sales for the coming year. In many instances, however, they have been met with such disturbing demands about cutting expenses and an unhappy picture of the state of the nation by the Brass Hats that they suddenly realized we are in the midst of something terrific. ("Yes, of course, we were able to pay a \$4.40 dividend on the common," says the B.H. "But with things looking so bad, we may not be able to pay \$5 next year as we had hoped.")

A conspicuous example of an important executive who takes an opposite view is President W. S. Shipley of the York Ice Machinery Company, who, at the recent convention of his salesmen, admonished his men to "take off your coats and go to work, creating jobs and wealth and sales. Let the politicians talk. Don't argue back, because it just makes more publicity." He quoted Patrick Henry: "Let the other fellow cry in a corner. You take off your coat and go to work."

Anyone who has talked to the rank and file of lumber dealers, builders and other building industry men cannot help but be impressed by the general feeling that there is plenty of good business ahead for those who will take advantage of many favorable circumstances and go after it. The new National Housing Act amendments will give a tremendous impetus to home building. It will take some time for the slower moving men of the industry to realize what these new helps are and to act on them. But many of the smart and aggressive firms have already

made their plans and will move swiftly and successfully.

Why shouldn't the average builder and dealer be feeling reasonably good? By far the majority have had the best business year in a long, long time. They have made a little money, they know there is a great and growing need for more of their products and services, and they feel confident that they can turn that need into definite sales for them in 1938 and subsequent years.

Just another small indication of the industry's faith in better times ahead:—renewals by subscribers to the *American Builder* have been running far ahead of 1937 and at an unprecedented high rate. New subscriptions have been coming in and are running 'way ahead of any previous year. That doesn't look as though the men of the building industry were planning to let the Brass Hats talk the "recession" into a panic.

### PITTSBURGH MINUS

**T**HE phrase "Pittsburgh plus" has given the city of Pittsburgh considerable publicity—most of it unfavorable and unwanted. This same city is now coming in for perhaps more than its share of unfavorable comment on another topic—housing. As expressed in a report by Columbia University Press of a three-year survey, "Pittsburgh and Allegheny County provide an outstanding example of the nation's housing needs. That slums and wretched housing mar them is admitted by the entire community."

Last fall a group of realtors and builders attending the National Real Estate Convention at Pittsburgh asked to see examples of small home building developments. Expert guides were provided and they set out to tour the city. After several hours had passed and the visitors had seen a number of charming home projects—but all priced above \$15,000, they raised a clamor, "Let's see some small houses." So the guides started off on another track. Another two hours passed, during which time the famous Buhl Foundation's Chatham Village was inspected, but still no small houses. The visitors bitterly complained, saying they had seen all the high-priced stuff they wanted. "Now let's see some small houses!"

The driver took them over bridges, through tunnels, far out into the suburbs on the other side of town—but by then it was so dark that he lost his way, and the tired travelers finally returned to their hotel without having seen a single house that could, by any stretch of the imagination, be classed as a small home or a "low cost" home.

*American Builder* realizes that there must have been some small homes built last year in Pittsburgh, but it is highly significant that a group of interested builders,



with a guide who knew the town, was unable to find any in the course of a day's arduous driving. We believe the incident significant because it is becoming more and more apparent that a community that does not provide attractive, livable, small homes within the reach of its average wage earners is justly open to criticism. In the case of Pittsburgh, the fact that private builders have apparently not been able to provide satisfactory "low-cost" homes is resulting in extensive agitation for subsidized government housing. The evidence concerning what the Columbia University report describes as "unsafe, insanitary, dilapidated, ill equipped and depressing homes," is well substantiated. Unless private builders and private capital make a tremendous effort to correct such evils, it is highly probable that they will find themselves completely out in the cold.

"Why is it you do not have more good small homes in Pittsburgh?" *American Builder* asked a number of the local real estate men at the Convention. The answer was invariably, "High taxes." The tax burden on a home in Pittsburgh—as in many other cities—is outrageously high. To the owner of a small five or six-room house it means a perpetual charge for real estate taxes alone of from \$12 to \$15 per month!

Thus Pittsburgh and many communities like her reward the thrifty, family-loving individual who puts his savings in a home of his own. Thus they reward the enterprising individual who puts his local building industry men to work and adds additional tangible assets to the taxable property of the town!

Pittsburgh, like other cities, loads practically all of the burden of the cost of government upon real estate. It encourages home building by making the home owner pay for everything—and when hard times come along, instead of reducing his taxes, they usually boost them a little higher!

As long as such an unfair tax system as this persists in Pittsburgh and other cities, how can the problem of "low cost" housing be met? The answer many people are making is, "Let the government do it." The present tendency is to shift the burden to local housing authorities, aided, and to some extent controlled, by the Federal government. The report of the Columbia University survey states that public subsidies are necessary.

*American Builder* believes that public subsidies and public housing are not necessarily the only answer. It is true that in the congested, slum infested areas of many of the larger cities a certain amount of such building is probably called for, but private builders can and should provide the bulk of homes needed in this country. They can do so by fighting for lower real estate taxes or a change in the real estate tax system as applied to home ownership. They can also set up home building operations outside of the high tax communities. The new amendments to the FHA offer great possibilities for the building of groups of low and moderate-priced houses which can be either sold or rented, and may prove the answer to the pressing demand for more small homes. But the fight for lower real estate taxes must be continued. Let's put premiums not penalties on home ownership.

## GAS INDUSTRY AIDS HOUSING

**W**ITH THE signing of the liberalized National Housing Act, the gas industry is announcing a national program to stimulate the construction and modernization of homes throughout the country. This program to be inaugurated in March, has the endorsement and backing of the gas utilities and appliance and equipment manufacturers from coast to coast, and is the answer of one of America's largest industries to the call by government for action on the part of private industry to assist during the now current revival in business.

More than 1,500 gas companies which serve a population of 80,500,000 people with manufactured and natural gas through some 17,022,000 meters as well as hundreds of gas appliance and equipment manufacturers, will co-operate in this great program. Thus, one of America's major industries with capital investment of over five billion dollars will make every effort to assist in stimulating housing activities with the resultant increased spread of employment in the construction field. The gas industry will co-operate and tie-in with all housing activities, private or governmental, together with the manufacturers of building equipment and supplies and will stimulate nationwide interest in the construction of new homes built with the primary consideration for up-to-date living.

It is recognized by the gas industry that a revival of building activity over the next several years will result in the construction and modernization of millions of homes and that these homes should be equipped with the latest and best in automatic gas cooking and refrigeration equipment, automatic gas water heating, automatic gas house heating, air conditioning, incineration and gas laundry appliances.

Included in the program will be an Architectural Competition among the architects of the United States and Canada for the design of all-gas homes and a Builders' Competition for the construction of such homes. The sum of \$23,700 has been appropriated as prize money for the architects' and the builders' competitions.

The gas industry will not furnish house plans, but will refer all prospects to local architects and local builders. It will establish a service for architects and builders in all matters pertaining to gas appliance installations and through demonstration homes assist in interesting the general public in the use of gas appliances for new home construction and modernization.

Under the direction of Major Alexander Forward, Managing Director of the American Gas Association, Mr. J. F. Quinlan, formerly manager of the nationally known "New American Demonstration Home Building Program, will direct this nationwide gas industry program from the new Home Appliance Planning Bureau at Association Headquarters in New York City. The theme of the program "Use Gas for All 4" is being incorporated into all national advertising and local companies will be asked to support the program by local newspaper advertising and other local promotional activities.



STEWART McDONALD, Federal Housing Administrator, who urges builders to "take swift action" under new FHA.

FEDERAL HOUSING ADMINISTRATION  
WASHINGTON

STEWART McDONALD  
ADMINISTRATOR

February 8, 1938.

To the Builders of America:

The National Housing Act Amendments of 1938 have been passed by the Congress, approved by the President and are being put in effective operation throughout the country with all the speed humanly possible.

It is our belief that these Amendments will make it possible for you to build and sell — or rent — better, more livable homes than ever before on terms well within reach of millions of home loving Americans.

You builders are the key men of this program, and we hope you will acquaint yourselves with the provisions of the National Housing Act as amended and take swift action to put your employees back to work, supplying the modern small homes so greatly needed in this country today.

Yours very truly,

*Stewart McDonald*  
Stewart McDonald,  
Federal Housing Administrator.

## Stewart McDonald Addresses a Message to the KEY MEN of the Building Industry

"THE MOST FAR REACHING recovery measure of the New Deal" is what building men are calling the recently enacted amendments to the National Housing Act. In the above letter Stewart McDonald, the able and energetic administrator of FHA, urges "key men" of the building industry to get into action. AMERICAN BUILDER

believes the Act has great possibilities for builders. It will enable the private building industry of the nation to supply housing and put millions of men back to work.

The new amendments are fully summarized on the following pages. NOW IS THE TIME TO GO INTO ACTION.



A CATCH AT LAST!

### High Lights of New FHA

A \$5,000 house can be sold for \$500 down and monthly payments of about \$27 for 25 years.

Builders can finance groups of 10 houses or more (\$1,150 per room) under a blanket mortgage covering 80 per cent of total property value. Homes can be sold or rented. Money is provided during construction.

Rural and country houses can now be financed by FHA same as city homes.

Cottages, summer homes and small houses in country, up to \$2,500, can be financed under Title I—modernizing section—and paid for in 10 years at 6.7% interest.

Wayside stands, filling stations, farm structures and other rural buildings for any purposes, up to \$2,500, can be financed under Title I.

Modernization loans up to \$10,000 available on all types of structures including all types of home equipment permanently built in or attached to property.

1/2% FHA service charge eliminated and insurance premium cut from 1/2% to 1/4% per year on reducing balance on houses under \$6,000.

Small banks and other financial institutions encouraged to make more FHA loans by increased liquidity—can be discounted, sold or borrowed on at short notice.

## Digest and Summary of

### Builders Busy on Plans for New Homes, Cottages, Modernizing, as "Most Far-Reaching Recovery Measure of New Deal" Gets Under Way. Active Spring Market Foreseen

**W**ITH the signing of the National Housing Act Amendments of 1938 by President Roosevelt February 3rd, the building industry was provided with new incentives for home building such as have never existed before in this country.

By most building men the passage of the Housing Act Amendments is considered the greatest recovery measure of the New Deal. A remarkable change in sentiment in the industry has taken place, with the result that both speculative and contract builders are drawing plans and specifications for a greatly increased volume of early spring building. Within a few days after signing of the Bill, many of the largest operative builders announced plans for new developments totaling thousands of home units.

Builders in rural areas are greatly encouraged by the extension of FHA financing to rural and country homes. An immediate increase in modernizing activity is taking place as a result of the liberal provisions of Title I—the modernizing section of the new Act. Construction of summer cottages, cabins, wayside stands and similar small structures under Title I is expected to boom because, for the first time, financing of such structures is made possible on monthly payments over a period of years.

Lower down payments, lower interest rates, elimination of the 1/2 percent service charge and reduction in the FHA premium rate are proving a great stimulus. The nationwide publicity given home building by the discussion of the Act in Congress is bringing thousands of prospects to the offices of builders and lumber dealers. A number of nation-wide campaigns to stimulate interest in home building in co-operation with FHA are getting under way. So despite the gloomy attitude of Wall Street and the very real effects of the current "recession" in many areas, the prospects are most encouraging and an active summer and fall building market is anticipated.

### Full Details of Act

*American Builder* has obtained full details of the complicated regulations of the revised FHA, and on the following pages presents a digest and summary of them. Builders are urged to get in touch with the nearest FHA branch offices, listed on page 45, for copies of the regulations and to make applications for new projects.

To understand the opportunities under the revised FHA the subject is best classified under four heads, as follows:

1. Liberalized financing terms on single-family homes (Section 203).
2. New incentives for building of groups of 10 or more houses for sale or rent (Sections 207 and 210).
3. Modernizing activity (Title I), including construction of new cottages, wayside stands and farm structures.
4. New credit facilities for home building that make insured mortgages liquid and provide vast additional fund for home financing.



of

# National Housing Act Amendments of 1938

## Single-Family Home Financing Greatly Liberalized —90 Percent Loans, 25 Years to Pay

Financing of individual homes, especially those under \$6,000, is extensively liberalized by the new Amendments. On homes up to \$6,000 the buyer needs to have an equity in cash or land of only 10 percent, and the balance is paid off in 25 years. The new regulations eliminate entirely the  $\frac{1}{2}$  percent service charge formerly made on FHA loans. The insurance premium charge of  $\frac{1}{2}$  percent is now figured on the decreasing balance. On houses under \$6,000 the premium charge is reduced to one-quarter of 1 percent per annum on the decreasing balance. The insurance premium charge on houses above \$6,000 remains at  $\frac{1}{2}$  percent, figured on the decreasing balance.

The effect of the 5 percent interest, 25 years to pay and the lower insurance premium is to greatly reduce the monthly carrying charges on a \$6,000 house. The carrying costs, that is, interest, amortization and premium payment, are estimated at about \$6.06 per \$1,000, or roughly, \$32 per month on a \$6,000 house which has the maximum \$5,400 mortgage.

Financing of more expensive homes up to \$10,000 is also made less expensive. On such houses FHA can insure a mortgage covering 90 percent of the first \$6,000 and 80 percent of the balance. Thus, on a \$10,000 house a mortgage of \$8,600 is possible. The interest is 5 percent and the premium charge  $\frac{1}{2}$  percent per annum, and the term of years is limited to 20.

Houses above \$10,000 can be financed as formerly on the basis of an 80 percent mortgage paid off in 20 years, at 5 percent interest, with a premium charge of  $\frac{1}{2}$  percent on the decreasing balance. The mortgage is limited to \$16,000.

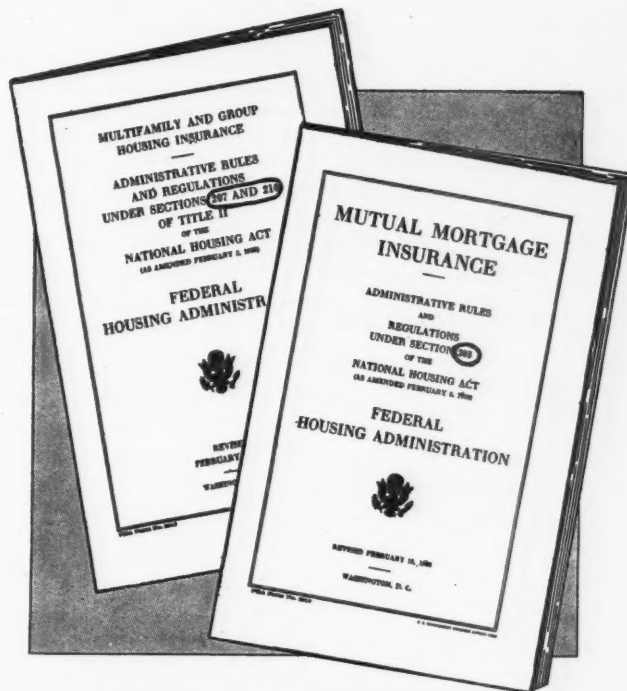
Interest rates are stated "not to exceed" 5 percent, and it is thought that in some communities a lower rate may be possible.

Houses under construction at the time the Amendments were passed or which were built any time after January 1, 1937, but not sold are eligible for FHA insurance. The procedure for obtaining loans is similar to that formerly used except that the operations have been standardized, simplified and speeded up. It is felt that these liberalizing Amendments as to lower down payments, interest rates and insurance charges will give an immediate impetus to construction of many single-family homes, both in the cities and in the country. The fact that FHA approval can now be extended to houses on the edges of towns and in the country outside of high wage, high tax and expensive building restriction areas will result in a large volume of home construction in these areas.

Those interested in obtaining the FHA rules and regulations relating to single-family home construction under Section 203 should write for FHA booklet No. 2010, Federal Housing Administration, Washington, D.C.

The new Housing Act Amendments give a great impetus to the construction of large and small groups of homes or apartments to be built for sale or rent. This is a new development that provides liberal financing on terms that should appeal to builders and developers.

Of particular interest to operative builders is Section 210, which provides for the building of new homes in groups of 10 or more or apartment buildings or row houses, financed by a blanket mortgage of from \$16,000 to \$200,000. A limitation of \$1,150 per room is placed



WRITE FOR THESE BOOKLETS. No. 2012, at left, describes rules and regulations for building groups of houses under Section 207 or 210. Booklet No. 2010, at right, describes rules and regulations for single-family home loans under Section 203.

on such projects. Houses so built may be sold or rented.

Under Section 210 a builder in a small town or who owns land on the outskirts of the city may arrange for a blanket mortgage on a group of 10 or more houses. Such a mortgage may represent 80 percent of the total value of the property, and the money is provided in the form of construction loans as the houses are built. It is thought that building houses in groups of 10 or more will enable better planning and economies in construction that will reduce the cost. Builders will be encouraged to plan a small community of this type with the prospect of either renting or selling the finished homes. Those that are sold will enable the builder to reduce his blanket mortgage by a comparable amount or enable him to borrow additional funds for more building.

Apartment buildings or row house projects up to \$200,000 are also covered by Section 210, providing the most liberal terms for this type of construction ever available in the history of the country. There has already been a veritable boom of planning and filing of projects of this type by builders of many communities, notably in New York and Long Island.

If a builder cannot obtain satisfactory local financing for such a group of houses or an apartment building, he can obtain the 80 percent blanket mortgage as well as construction advances during progress of the work directly from the new National Mortgage Association of Washington, provided for in the Act and already set up with \$10,000,000 capital from the Reconstruction Finance Corporation. This ability to go direct to Washington for construction money is expected to act as a lever on slow-moving local financing institutions.

The fact that very little actual cash is required from the builder and that a group of homes so financed can be either sold or rented profitably is expected to give an

immediate impetus to building, which some analysts claim will prove to be the largest program of small home construction ever gotten under way in this country in a short time.

Many builders have pointed out that they have on their prospect lists numerous individuals with steady jobs, such as policemen, firemen, school teachers and others, who have been unable to buy because they lack the down payment. These builders indicate that in the case of A-1 prospects of this type, they will sell a house with little or no down payment, allowing the buyer to pay rent until he has accumulated an equity equal to a down payment.

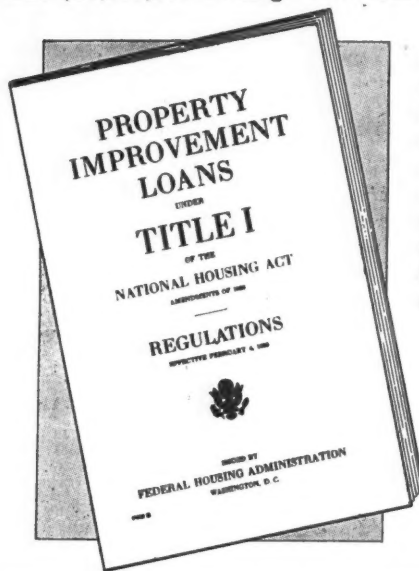
Much publicity has already been given the large-scale rental projects made possible by the new Amendments under Section 207 of the Act. It is said by FHA officials that \$50,000,000 of large row house and garden apart-

ment projects at moderate rents are ready to start almost at once. This type of operation is particularly applicable to large cities and metropolitan areas. They are subject to rigid government control and operate as limited or deferred dividend corporations. Mortgages on projects of this type may run as high as \$5,000,000, covering 80 percent of the valuation. The interest rate is limited to 4½ percent. There is no definite limitation on the period of years over which the mortgage may run: in the case of a number of such projects already built, such as the 650-unit Buckingham Communities at Arlington, Va., the mortgage period has been 26 years. The cost per room on these large-scale rental projects is fixed at \$1,350.

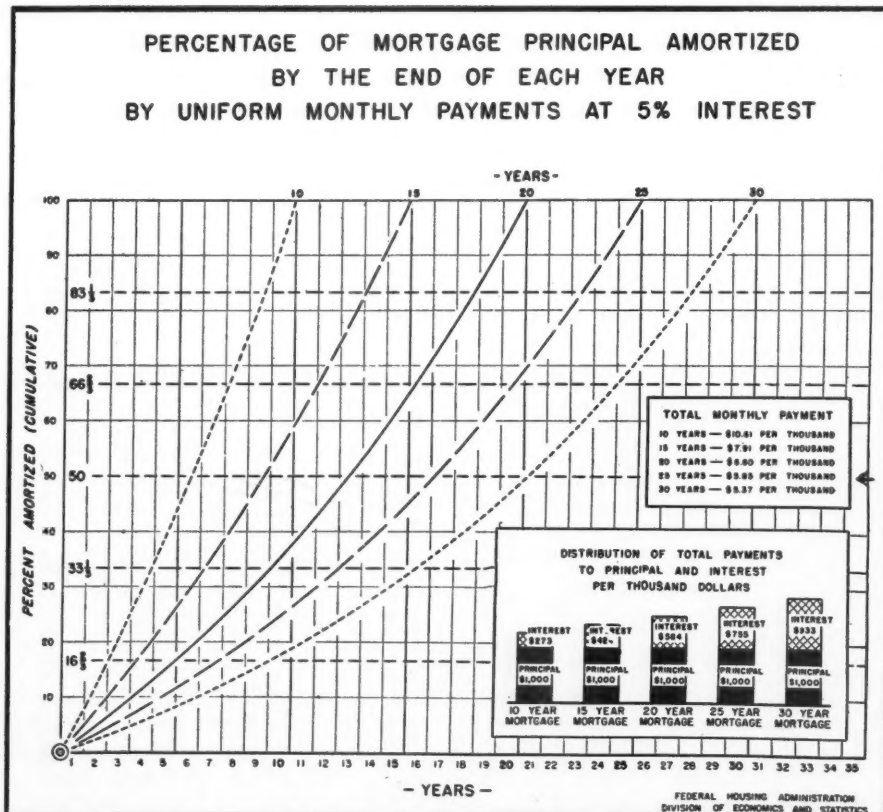
A new feature of the Act in Section 207 eliminates expensive foreclosures proceedings in case such a project gets into difficulty, by giving the mortgagee the option upon default of assigning the insured mortgage to the FHA in exchange for debentures. This provision makes the financing of such projects by means of bond issues secured by an indenture of trust or mortgage more attractive, and has already resulted in the announcement by a number of large insurance companies of their willingness to finance such projects. A Bill was passed by the New York State Legislature February 8, permitting life insurance companies to invest up to 10 percent of their assets in housing projects, which has cleared the way for such projects.

Large-scale rental projects are thought to have an appeal not only to private builders, to trustees of large estates with large land holdings, and to other real estate and financial organizations seeking a stable investment, but also to semipublic and public municipal housing authorities in communities where there is a shortage of rental quarters. It is considered likely that much more building will be carried on by private builders under Section 207 than will be possible under the Wagner Bill.

FHA booklet No. 2012 entitled, "Multifamily and Group Housing Insurance," gives the administrative rules and regulations for operation under Sections 207 and 210, and builders interested are urged to write for copies.



BOOKLET FHE I, "Property Improvement Loans under Title I," describes rules and regulations concerning modernizing loans and loans for building cottages, camps, farm buildings, wayside stands, etc.



FHA CHART SHOWS HOW MUCH PRINCIPAL of amortized loan is reduced each year. Note that on 25-year loan at 5 percent interest the monthly payment is only \$5.85 per \$1,000.

### Title I—Modernizing—Revived and Extended to Include New Small Structures

Possibly the most immediate volume of building to result from the new Housing Amendments will be under the revived Title I, providing for repairs, alterations or improvements of practically all types of structures. Such modernization loans may be up to \$10,000 and may be on buildings or structures located in either the city or the country. The maximum charge which a bank may make for such a loan is a \$5 discount for each \$100 original face amount. It is thought that the revival of modernization loans will give a great stimulus to reroofing, painting, re-siding, installation of plumbing and heating equipment and the general improvement of homes and business structures. The procedure remains similar to that in force before.



## Summer Cottages and Small Country Homes Included under Title I

An important addition to the Housing Act under Title I is the provision for financing construction of new residential structures valued up to \$2,500. *On buildings of this type the loan may be paid off in 10 years on monthly installments. The maximum charge that may be made by the bank is \$3.50 discount per \$100 original face amount, which is, in effect an interest rate of 6.7 percent.* Like the modernization loans under Title I, the money is advanced by a bank or loaning institution on the basis of a note which is discounted in advance. There is a minimum of red tape in such type of loan, and for this reason it is expected that a considerable volume of construction will get started. Collateral security for a loan of this type is required in the form of a mortgage or deed of trust. Money advanced on a note may be paid directly to the contractor or material man on written authorization from the borrower following the signing of a certificate of completion by the contractor.

Anticipating an immediate volume of cottage and small home construction under this section, FHA has already issued a set of minimum specifications including the following:

1. **Foundations.**
  - a. All foundations shall be of masonry pier or wall construction.

- b. Foundations shall be carried below the frost line prevailing in the neighborhood.
- c. No wood construction shall be less than 18 inches from the ground in unexcavated portions, and 8 inches from the ground on the exterior.
2. **Minimum Lot Size** (Upon which there is no other dwelling).
  - a. Minimum area shall be 4,000 square feet with a minimum frontage of not less than 40 feet, where public water supply and public sewer are available.
  - b. Minimum area shall be 7,500 square feet, where public water supply is available and private sewage disposal system (cesspool or septic tank) is used.
  - c. Minimum area shall be 20,000 square feet where both public water supply and public sewer are not available.
3. **Minimum Floor Area** of the dwelling shall be 360 square feet.
4. **Windows.**
  - a. All habitable room including bathrooms must be provided with one or more windows to permit adequate natural light and ventilation.
5. **Water Supply.**
  - a. When public water supply is available connection shall be made to public water main.
  - b. When public water supply is not available a private water supply shall be on the property and may be a drilled, driven or dug well or a natural spring.
6. **Sewage Disposal.**
  - a. When public water supply and public sewers are available a bathroom shall be provided and running water shall be piped and connected to all fixtures and the kitchen sink and connection shall be made to public sewer main.
  - b. When public water supply is available but a public sewer is not available a bathroom shall be provided and running water shall be piped and connected to all fixtures and the kitchen sink and a cesspool or septic tank shall be installed.

(Continued to page 104)

## 84 Branch FHA Offices

Get in Touch with Nearest Branch or Write Direct to Federal Housing Administration, Washington, D.C.

ALABAMA—Birmingham  
2105 Third Ave.  
Robt. Jemison, Jr., State Dir.  
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Pyramid Bldg.  
A. Syd Willbanks, Underwriter  
CALIFORNIA—San Francisco  
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—Washington  
1001 Vermont Ave., N. W.  
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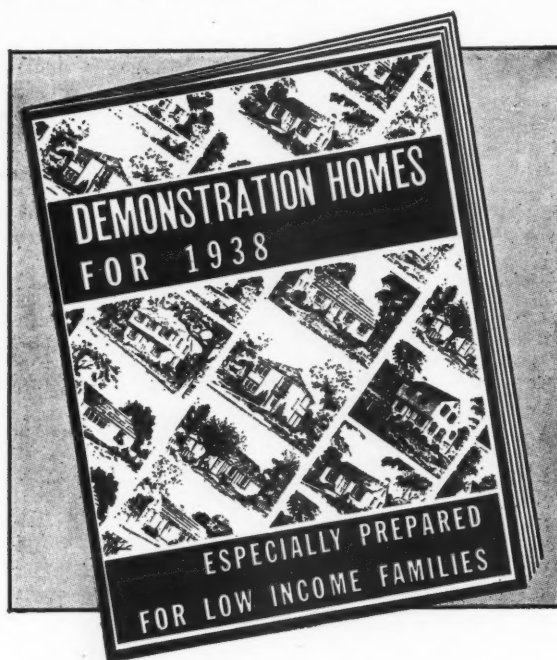
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# 5,000 Demonstration Homes!

**Builders, Dealers, Manufacturers to Co-operate with FHA and Chambers of Commerce in Building Small Homes. Special Designs Prepared, Blue Prints Available**

**E**VERYONE has been talking about small home building—but now a program is offered to builders and lumber dealers that actually *does* something. A national program is already in full swing under the leadership of the National Lumber Mfrs. Assn. and the National Retail Lumber Dealers Assn. to aid local builders and dealers in putting up expertly designed small demonstration homes. FHA is backing the plan, and the aim of the sponsors is to promote the building of 5,000 demonstration homes this year.



DEMONSTRATION HOME MANUAL available to builders or dealers interested in obtaining plans or building demonstration homes.

This is a practical program planned to enable the local builder or dealer to demonstrate in his own community the comfort, livability and attractiveness of the small home of 1938.

The first step has been the preparation of expertly designed plans for the 8 designs illustrated on the following pages. The complete blueprints are being supplied at the production cost of one dollar a set by the National Small Homes Demonstration, headquarters at 1337 Connecticut Avenue, N. W., Washington, D. C.

Believing that lower home costs can be achieved by better planning, sponsors of the Demonstration Program have engineered the plans for these small homes for economy: they are rectangular in shape, avoid complicated roof construction, and cut up exterior details. They utilize stock sizes and standard lengths, and what is most important, are laid out to make use of standard low-cost plumbing, heating and electrical equipment.

The only cost to a builder or dealer who wants to erect a demonstration home is the one dollar for the floor plans. He will receive the co-operation of FHA, the National Small Homes Demonstration and its allied groups in obtaining publicity and in organizing a strong and effective local demonstration program. Local chambers of commerce, women's clubs, industry groups and local housing groups are expected to co-operate in making the Demonstration Home a success. Newspaper articles and suggested advertisements will be supplied.

These are definitely low cost homes which fit in with the new FHA financing set-up for houses under \$6,000. The cost range from the smallest one-bedroom cottage to a 4-bedroom, 2 story house will be from \$10 to \$22 per month for carrying charges exclusive of taxes.

To prove its faith in the program, the National Lumber Manufacturers Ass'n has already started construction of a group of 8 houses near Washington which is described as a "laboratory community." The 8 small homes are attractively grouped around a curving street creating a complete little community in good architectural style along the line suggested by FHA community planners. This group of small homes is illustrated on the opposite page.

This program is a direct outgrowth of the Small Homes Program the N. L. M. A. sponsored last year which resulted in the construction of 3,000 small homes. The  
(Continued to page 102)

## Advisory Committee of Building Groups Co-operating in Small Home Demonstration Program

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The Producer's Council  
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Johns-Manville Corporation  
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National Small Homes Demonstration

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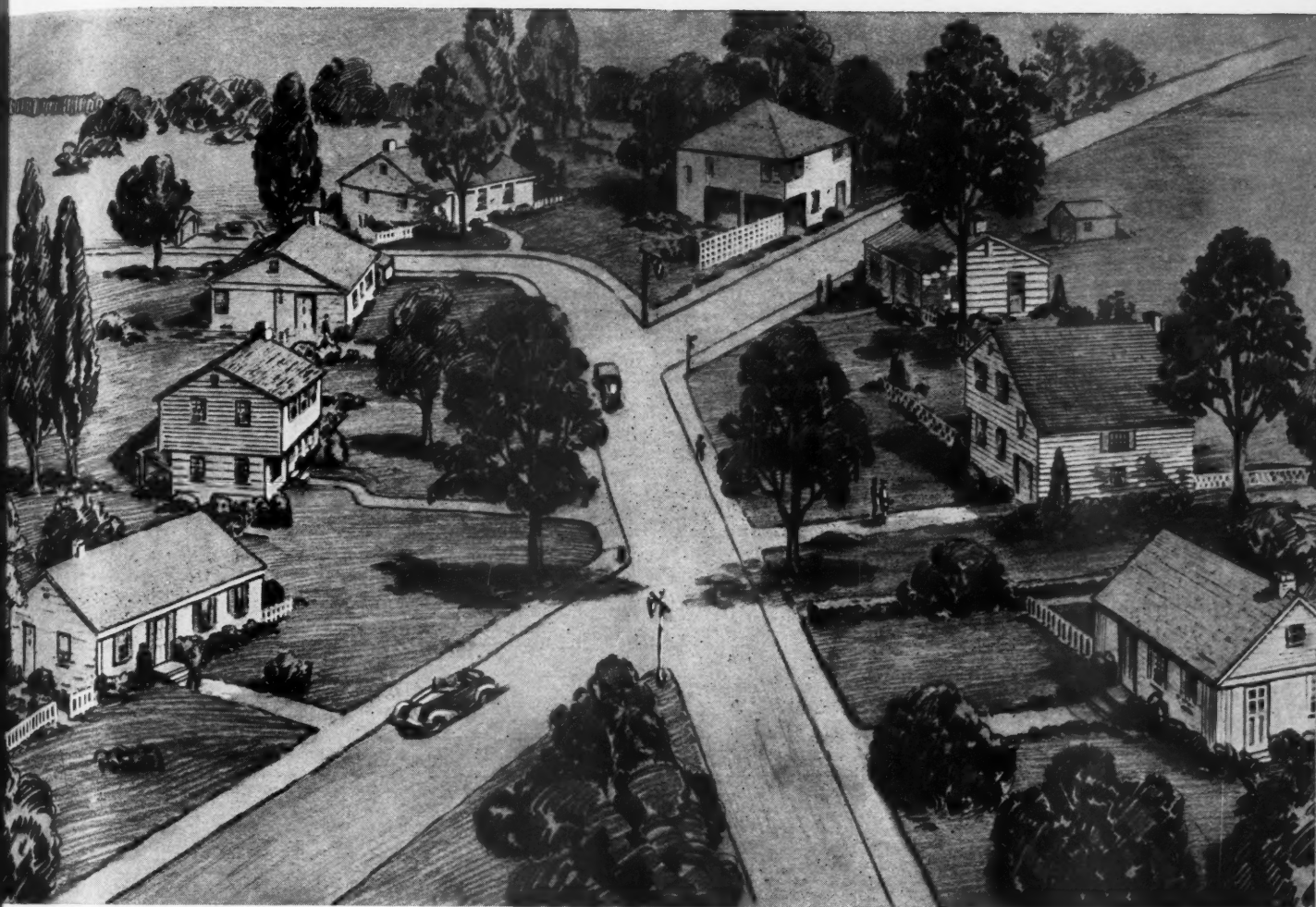
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THIS GROUP OF SMALL HOMES is already under construction in Washington, D. C., to demonstrate in a "Laboratory Community" the effectiveness of the Demonstration Home program.

## 8 Economical Designs Costing \$10 to \$22 Per Month Under New FHA Plan

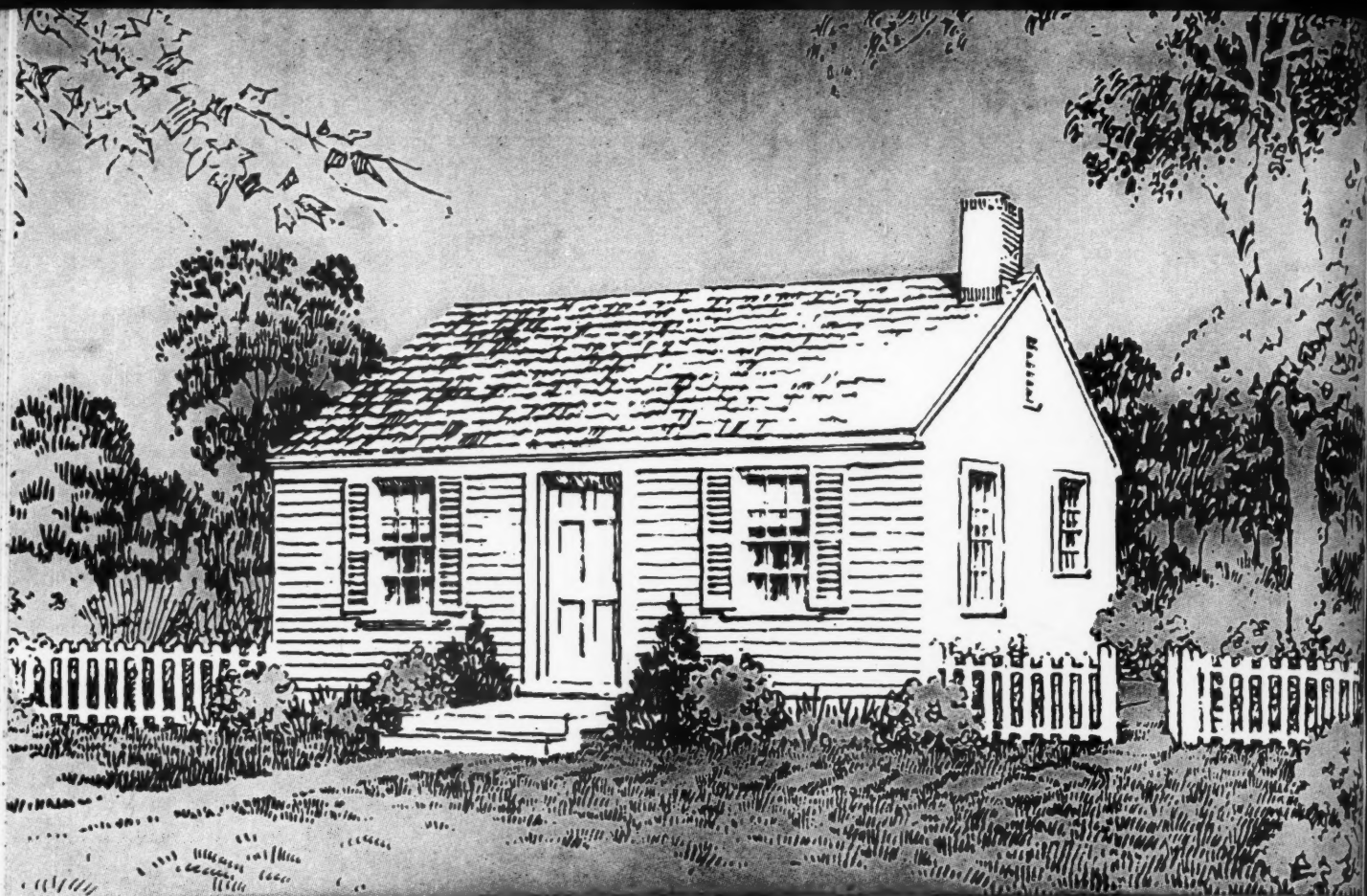
**A**S THE outstanding feature of its design section this month **AMERICAN BUILDER** is happy to present the following economical low-cost home designs prepared especially for the National Small Homes Demonstration Program. These are compact, efficiently laid out little houses ranging in cost from \$1,750 to \$3,400. Under the new FHA 25 year Amortized Mortgage plan such little homes can be financed with a 10 per cent down payment and monthly carrying charge of from \$10 to \$22, exclusive of taxes.

How a group of these homes artistically laid out around a winding street will look is indicated in the drawing above of the "laboratory community" now

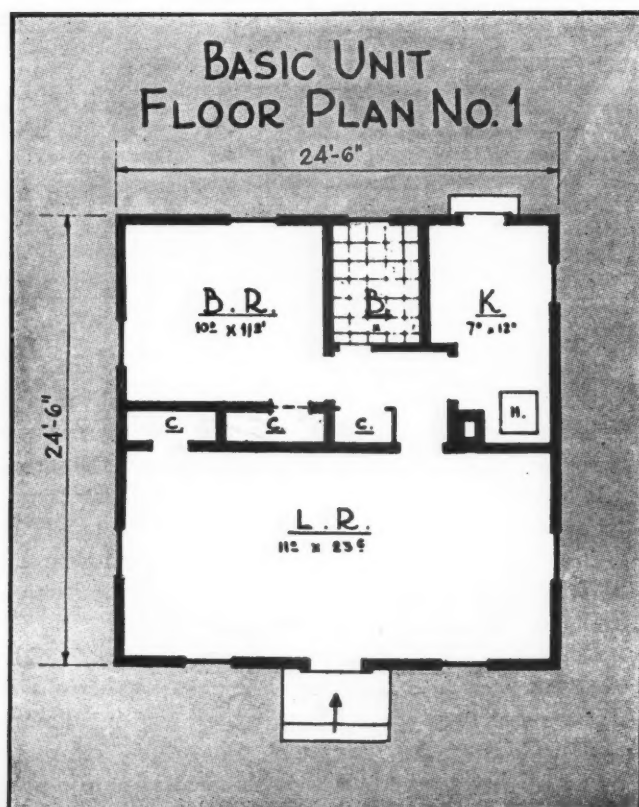
under construction near Washington by the National Lumber Mfrs. Assn. Under Section 210 of the revised Housing Act a group of not less than 10 houses of this type can be financed under a blanket mortgage for 80 per cent of the total value of the project. FHA is interested in seeing builders create well-planned little home communities of this type, and houses so built can be either rented or sold.

Complete blue prints of these Demonstration Homes are available at very low cost. Builders and dealers are urged to take an active part in demonstrating to their townsmen the high value, high quality small homes available to the public today at a price range within the reach of all.





## HOUSE NO. 1—Minimum Cost, Expandable, “Garden Apartment”

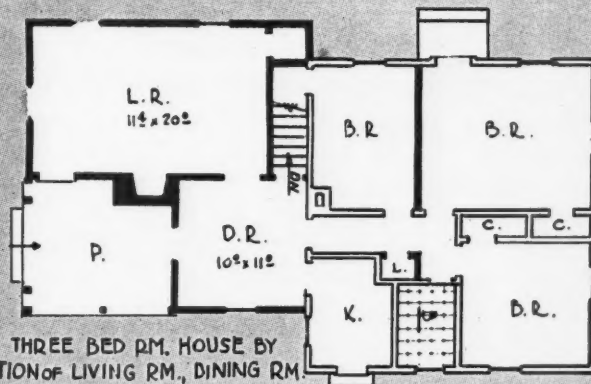
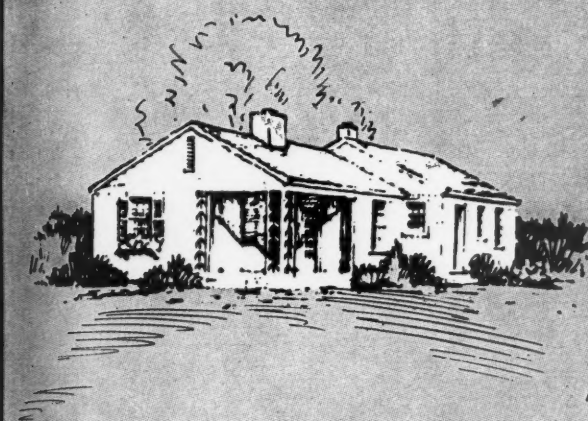


THIS IS the minimum cost, minimum accommodation Demonstration Home shown in this series. It is well suited to standard construction, or as in the "Laboratory Community" it may be dry-built construction, with the weatherboarding applied directly to the studs over insulating paper; and the sheathing, in the form of wood paneling placed over another layer of paper on the inside of the stud walls, thus giving the advantage of a beautiful interior, lower construction cost and practically equivalent insulation.

This basementless design is intended as the lowest-cost first unit for two people. It is so planned that it can be easily converted into a two-bedroom home at time of first construction, or expanded without loss of efficiency into a two or three-bedroom house with dining room as shown on opposite page.

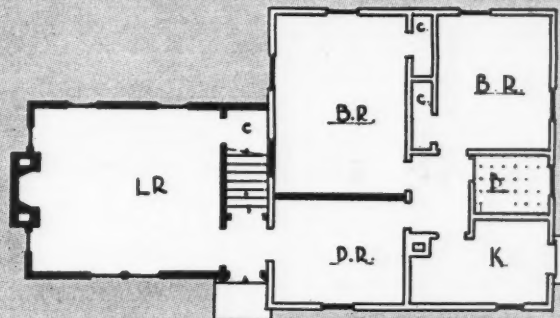
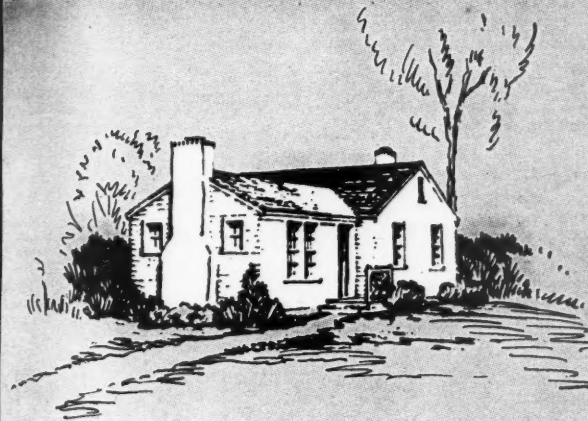


## VARIATIONS OF HOUSE NO. 1



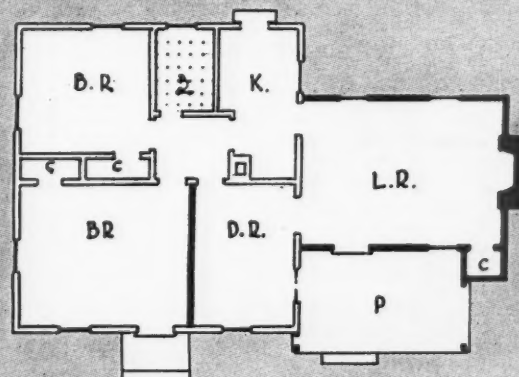
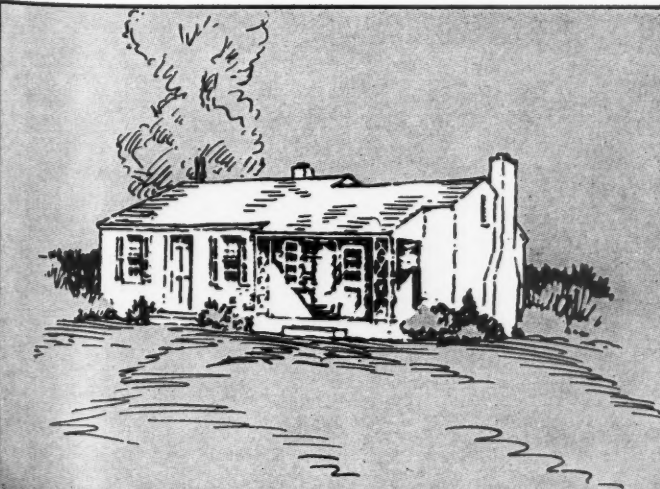
THREE BED RM. HOUSE BY  
ADDITION OF LIVING RM., DINING RM.,  
PORCH & BASEMENT

1A—A partition across the former living room and the addition of a new living room and dining room wing makes this three-room house into a six-room house with porch. The suggested floor plan contemplates that the new wing is to be built with basement. The picture is a rear view of the added-to house.



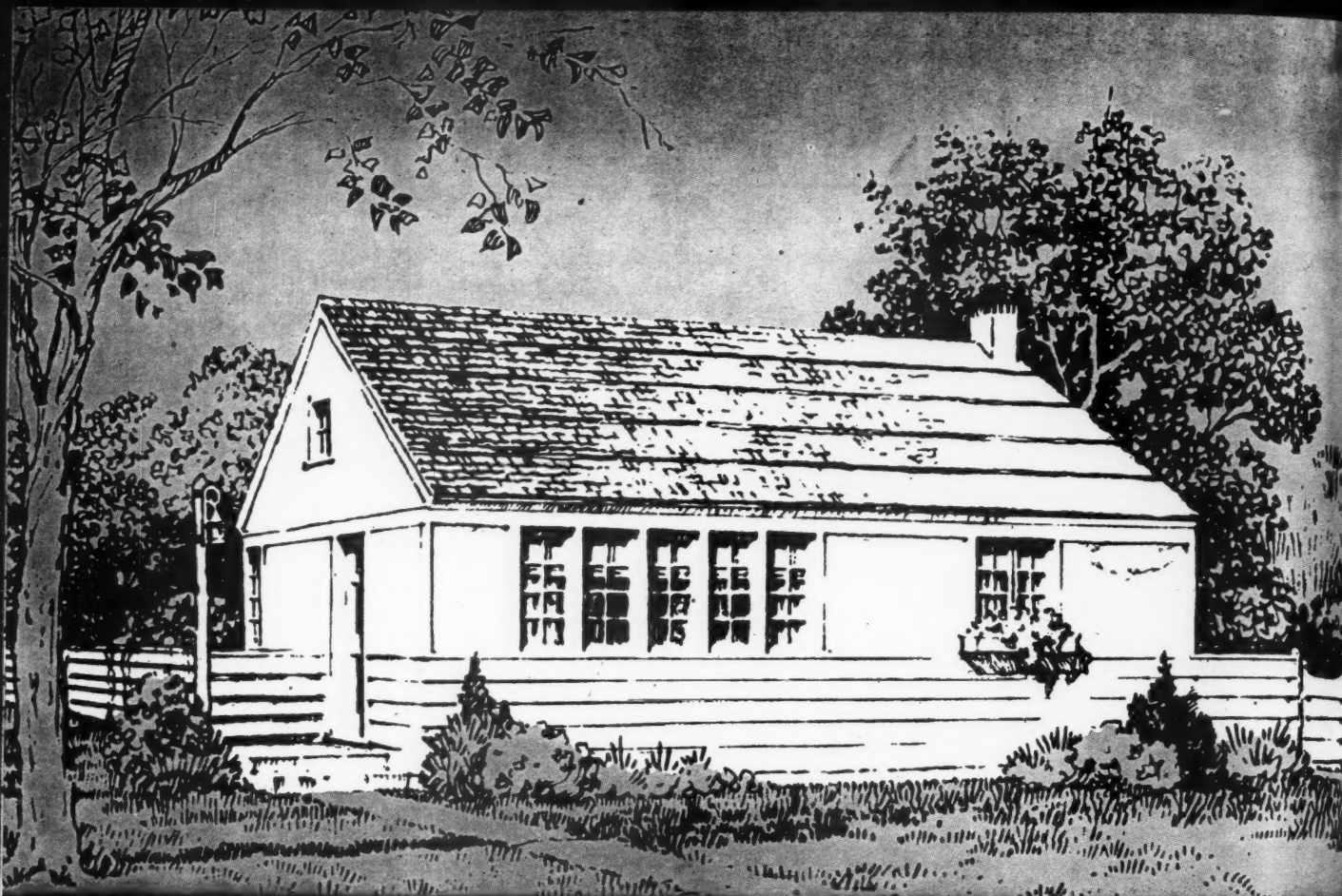
THREE BED RM. HOUSE BY ADDITION  
OF LIVING RM. AND BASEMENT.

1B—This addition, which also houses the living room, is slightly smaller than 1A and at right angles to the base building. The division of the former living room has provided one bedroom and a room for use as a dining room. This variation of the base plan also calls for a basement under the new wing. If desired the basement may be omitted.

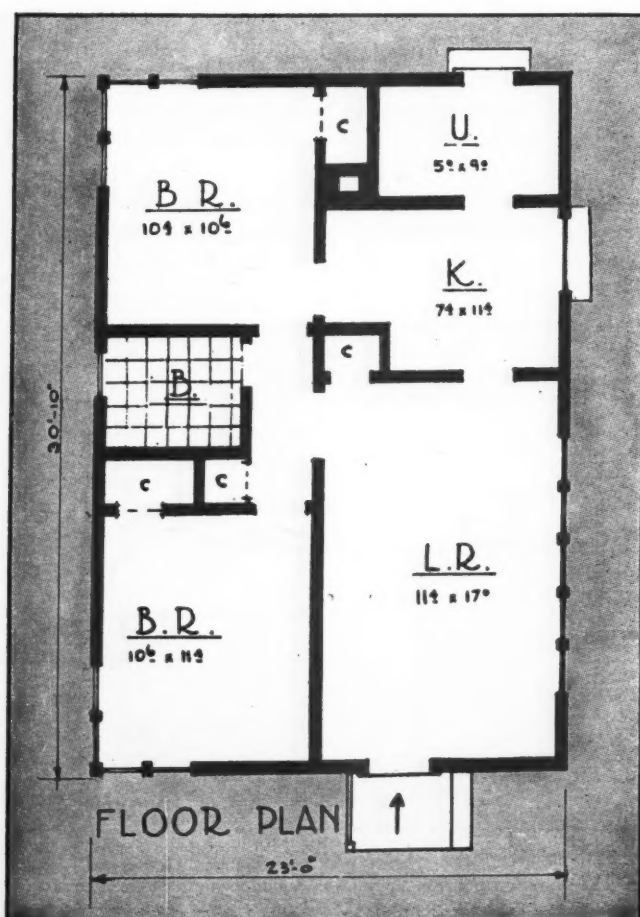


FIVE RM. HOUSE BY ADDITION OF  
LIVING RM. & PORCH.

1C—This alternate provides a porch on the front and one additional bedroom. This plan without a basement is probably the least expensive of the three variations of Demonstration House 1. The original unit may be heated with a space heater or in mild climates by a fireplace. The other additions provide basement space for heating facilities.



## HOUSE NO. 2—"Garden Apartment" with Two Bedrooms

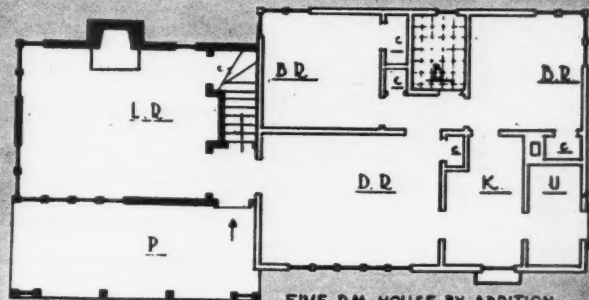
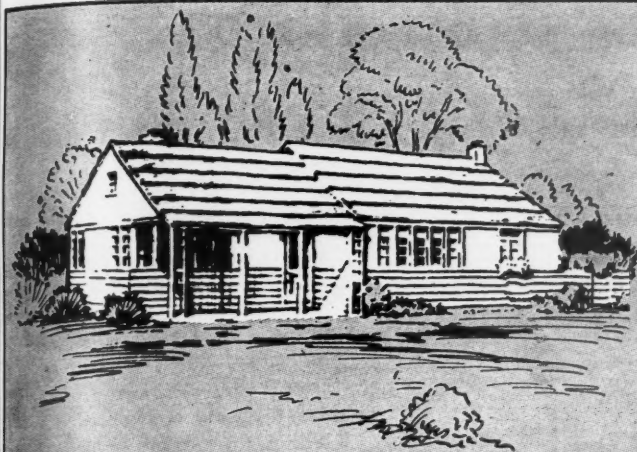


THIS is the lowest-cost two-bedroom or one-bedroom-and-dining-room home of the series. The rooms are conveniently arranged for comfortable living. The direct access from the kitchen to the rear bedroom makes possible the use of that room as dining space for the family needing only one bedroom.

The house is illustrated without basement. If a basement is desired the stairway may be placed in the present utility room space. The proportions of this house make it suited to many alternate exteriors. In the main illustration the home is shown with horizontal boards below the windows and plywood above.

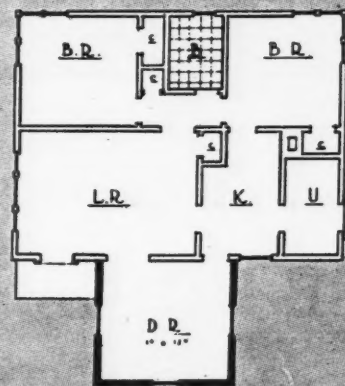
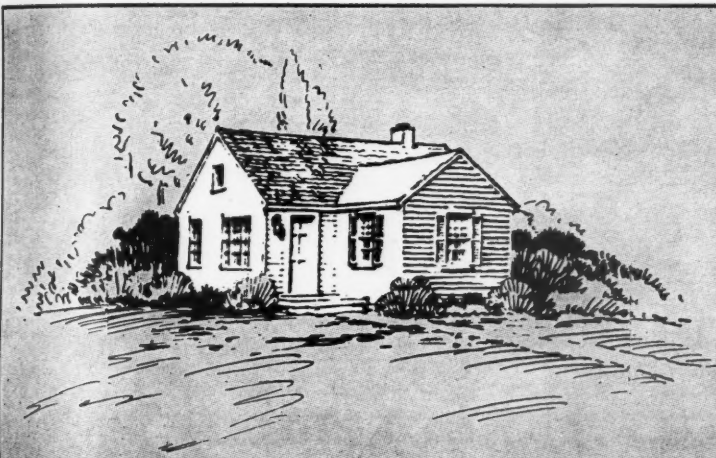


## VARIATIONS OF HOUSE NO. 2



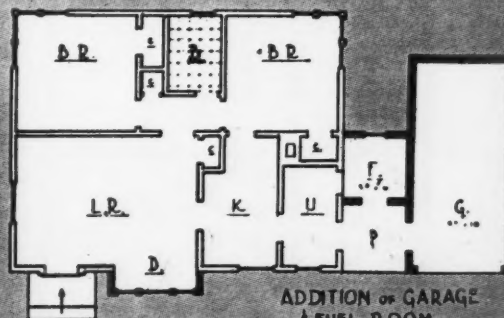
FIVE RM. HOUSE BY ADDITION OF LIVING RM., PORCH & BASEMENT.

2A—A new living room, basement, and porch wing change original No. 2 into a five-room house with the former living room now a dining room. The new wing has preserved the same style as the base unit and gives no suggestion of having been added to.



FIVE ROOM HOUSE BY ADDITION OF DINING ROOM.

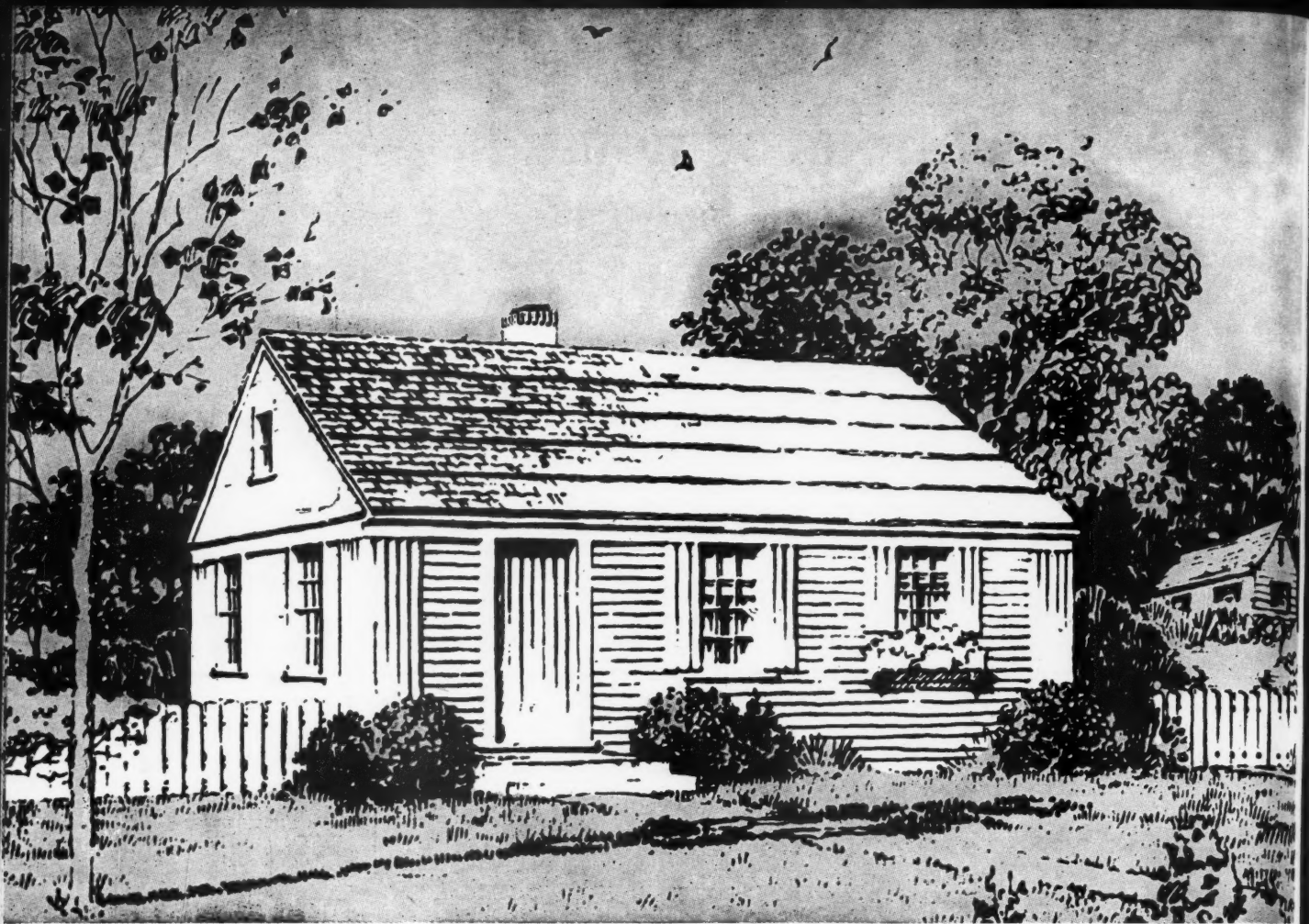
2B—This edition of No. 2 means adjustment of the living room windows to allow access to the new dining room wing to the front. Care should be used in placing the base house on the lot as the new extension may bring the structure too close to the street.



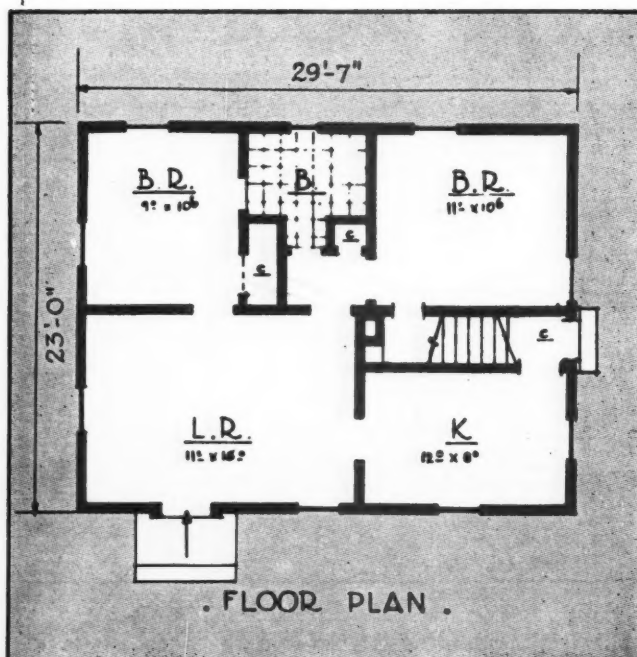
ADDITION OF GARAGE & FUEL ROOM.

2C—A storage room, passageway and garage, plus rearrangement of living room windows and conventional exterior siding, completely alter the exterior appearance of this version of No. 2 without radically changing the floor plan. This arrangement permits more storage space, but does not increase the living quarters.





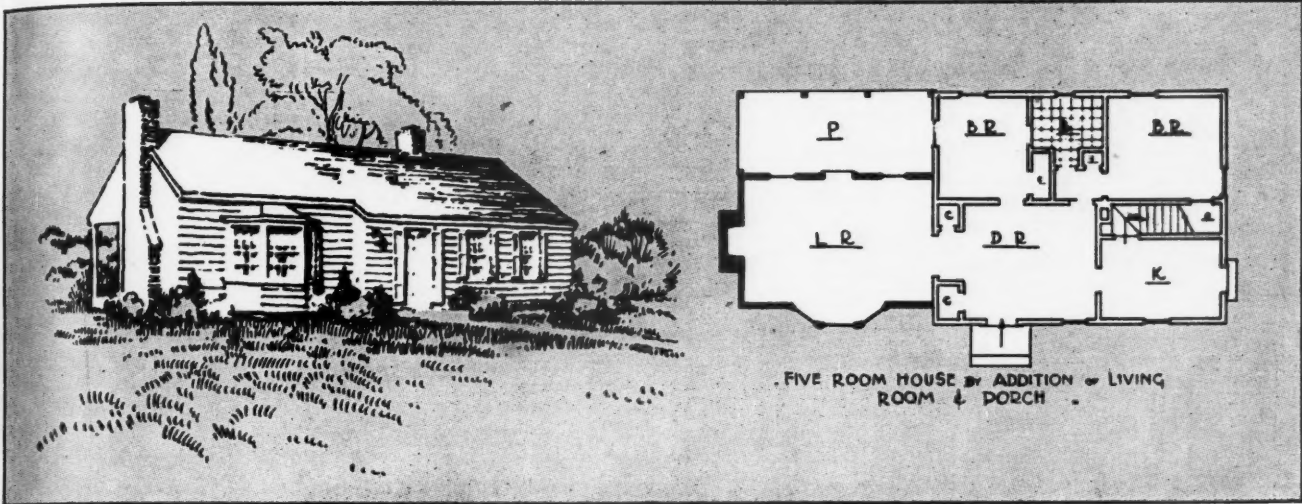
## HOUSE NO. 3—Minimum Two Bedroom House with Basement



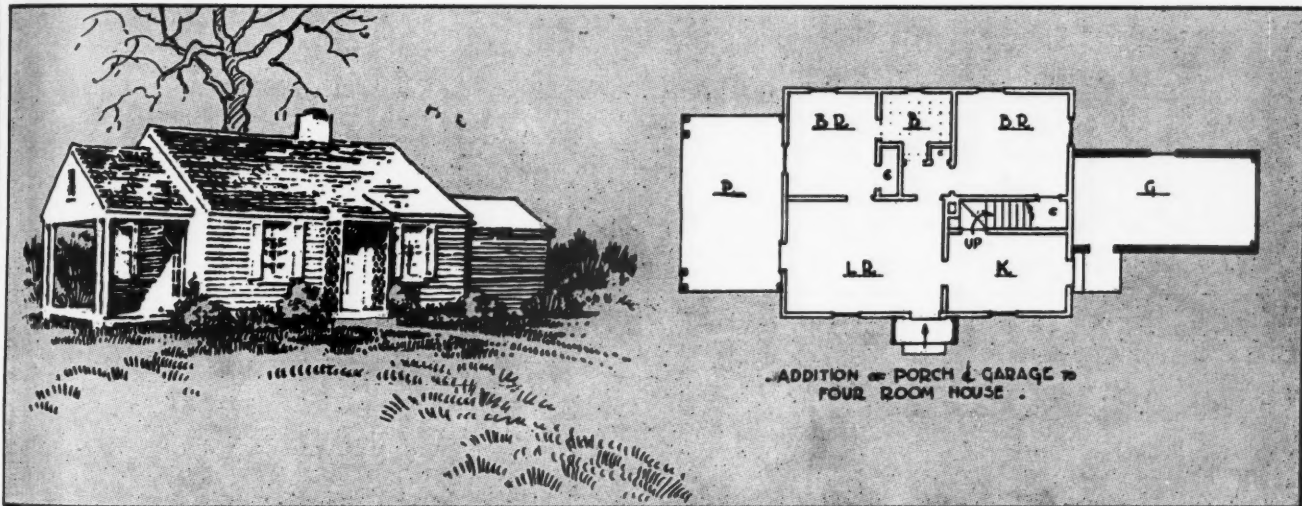
DEMONSTRATION House No. 3 offers efficiency on one floor with the traditional basement for housing the heating plant. The kitchen provides ample space for eating. The exterior corner decoration, the front door, and the shutters are fabricated from stock log cabin siding patterns.

If built without a basement or when used in mild climates, the space now occupied by the cellar stairway might serve as a heater room, or in case a fireplace is built and no other heat required, this space may be added to the bedroom or kitchen. The shadow lines in the shingle roof are produced by double courses of shingles as a variation in roof appearance.

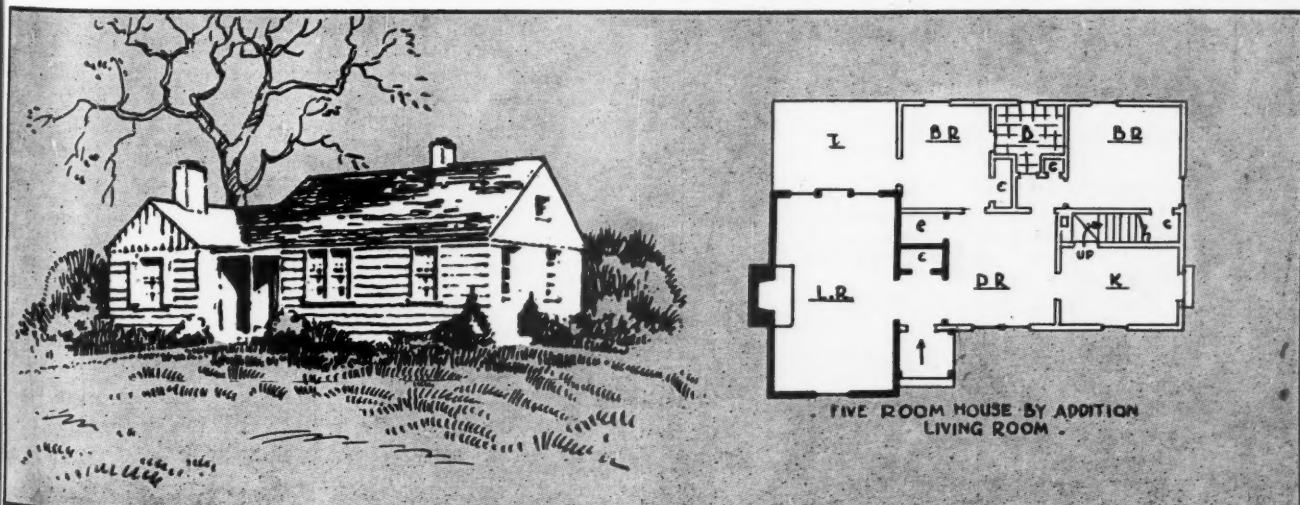
## VARIATIONS OF HOUSE NO. 3



3A—This variation is intended as an addition to an existing No. 3 or is well suited for narrower lots by building the house with end of the living room facing the street or wide lots by facing the porch side to the street.



3B—This illustration offers the advantages of a good sized porch and a garage. No additions are made to living quarters. The porch and garage might be added to No. 3 without moving the front door to the center of the building. The exterior effect is good.

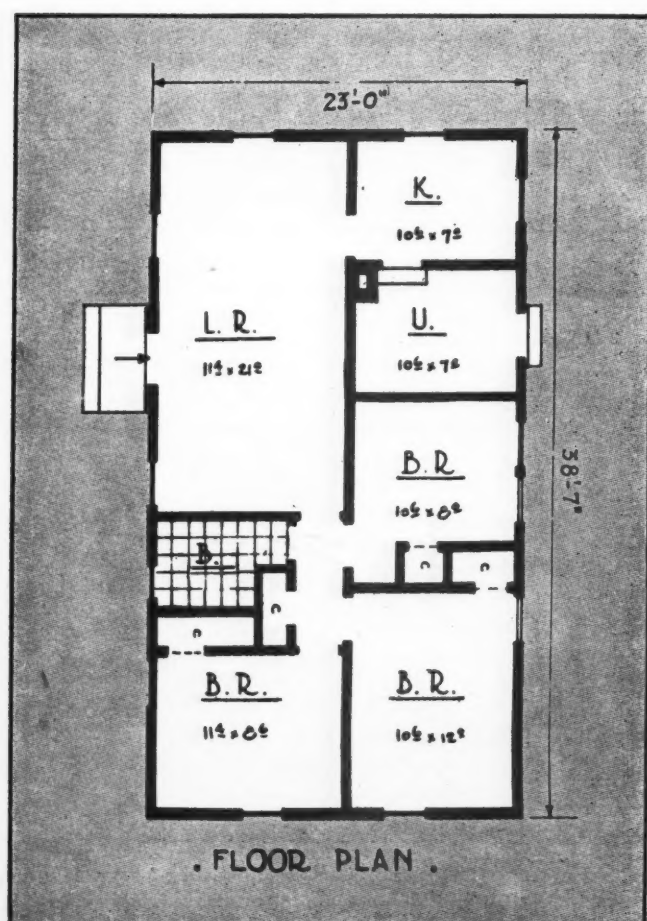


3C—This simple edition of No. 3 includes a large living room, a dining room, extra storage closets and a fireplace. This version should be built as a complete unit in the beginning since it involves moving the front door which is a structural change not usually recommended for simple additions; or the original may be built with this addition in mind.





## HOUSE NO. 4—Basement Dollar Spent for More Room Above Ground

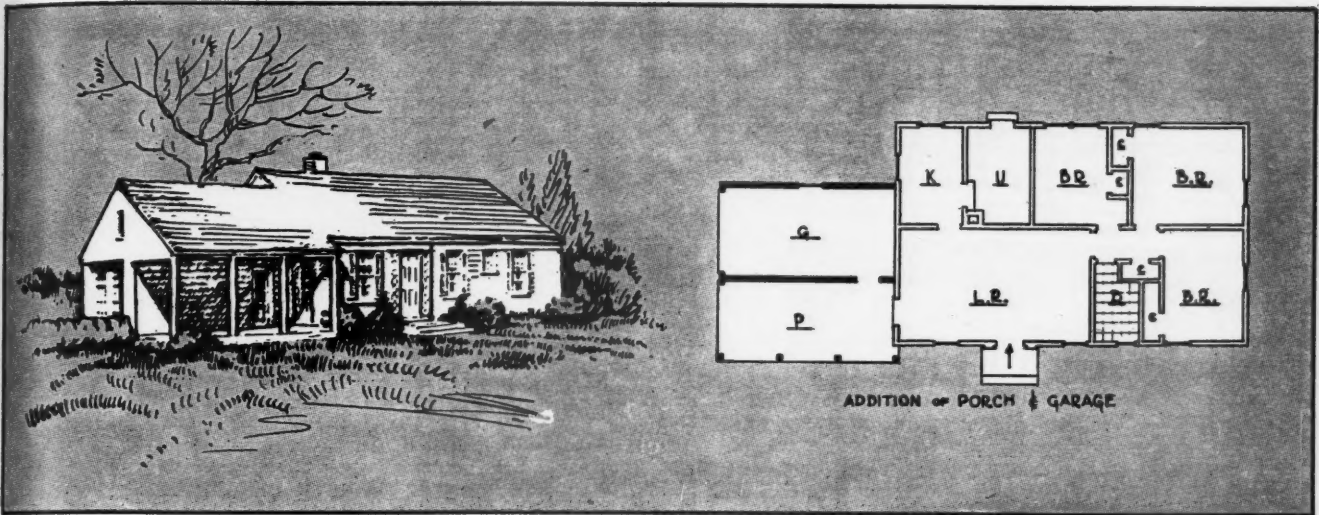


THIS home offers practically every facility ordinarily associated with six-room homes, except separate dining space, at a cost much lower than the general average for houses of similar accommodations. It affords local building industry men an opportunity to demonstrate how thorough planning allows better home values. This is accomplished by additional above-ground-area built with the money spent for the basement in No. 3. This provides an extra bedroom, a utility room and unusually large living room.

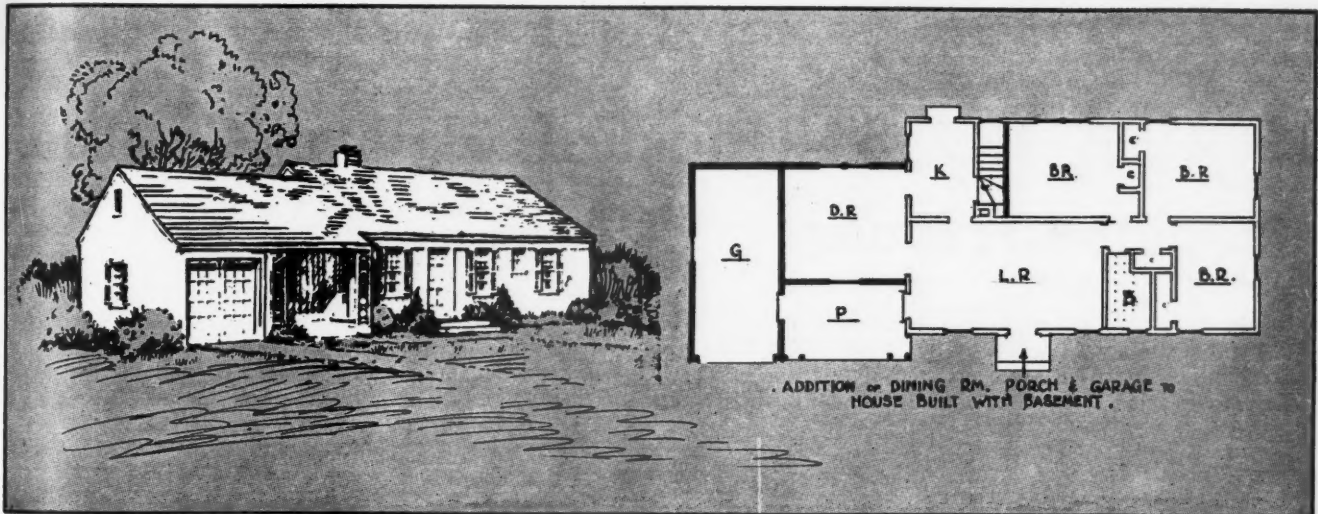
The end of the extra size living room will serve as a dining room without inconvenience or extra steps. If constructed with basement, the bedroom next to the utility room or the kitchen can be given the extra space not needed for cellar steps.



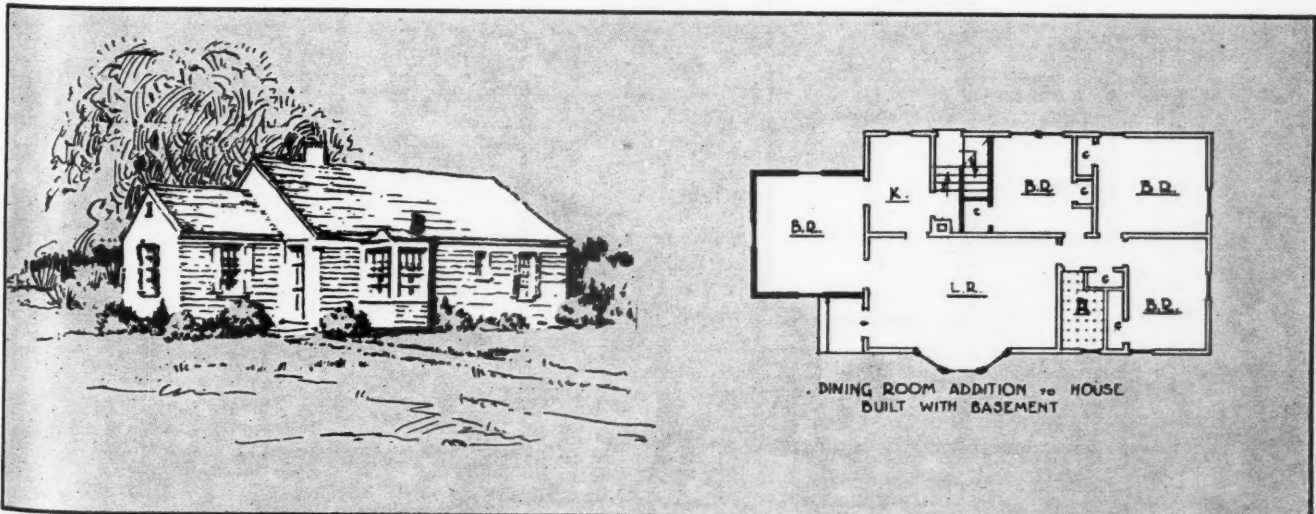
## VARIATIONS OF HOUSE NO. 4



4A—A garage and porch added as illustrated make possible an impressive sixty-foot home for a very small relative cost. By moving the garage and porch farther back on the house and built that end to the street it will fit a narrow lot. This addition can be made without change in the basic house.



4B—This edition of No. 4 collects in one house most possible additions which the average family would be likely to make. They include: Basement, garage, dining room and porch. The net result is an interesting exterior suited to a corner lot or to a suburban and rural setting where the necessary wide lot is likely to be available.



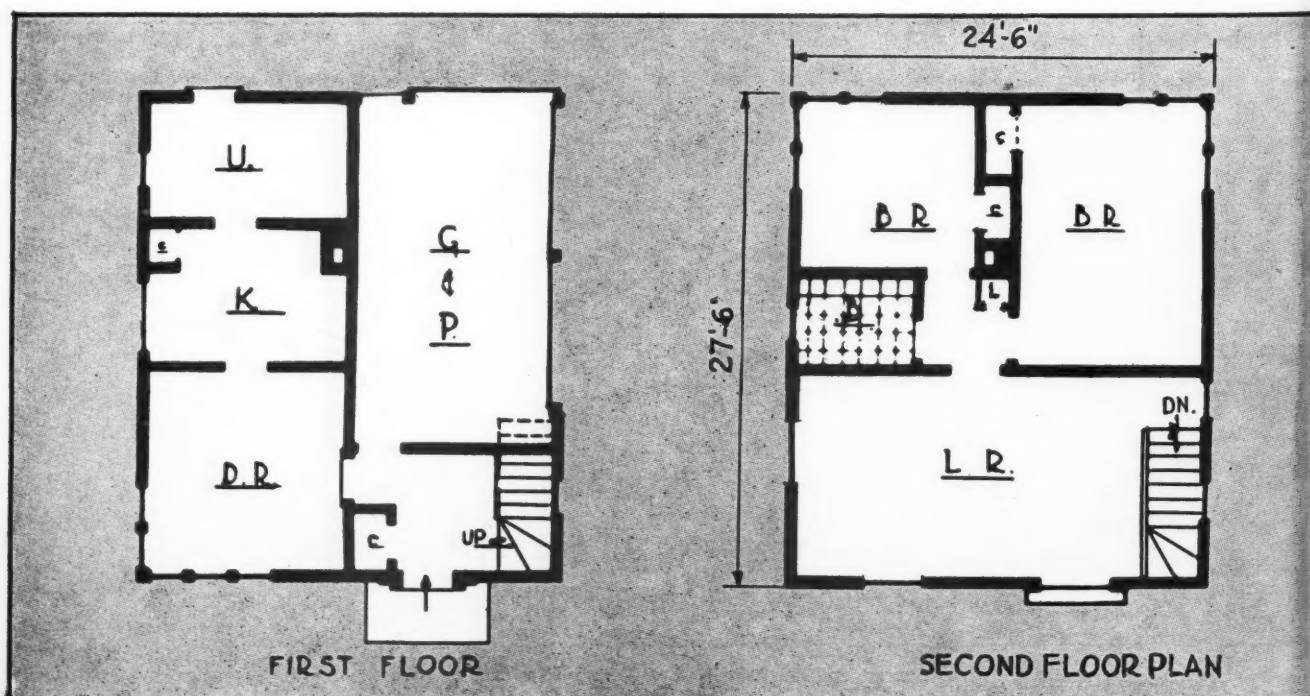
4C—This illustrates one method of enlarging the facilities of No. 4 and also illustrates the possibility of adding a basement, of putting the stair in the utility room and securing additional closet space in one bedroom. The new wing on the left adds a dining room, making this a most commodious house.



## HOUSE NO. 5—Unusual “Above Ground” Basement House

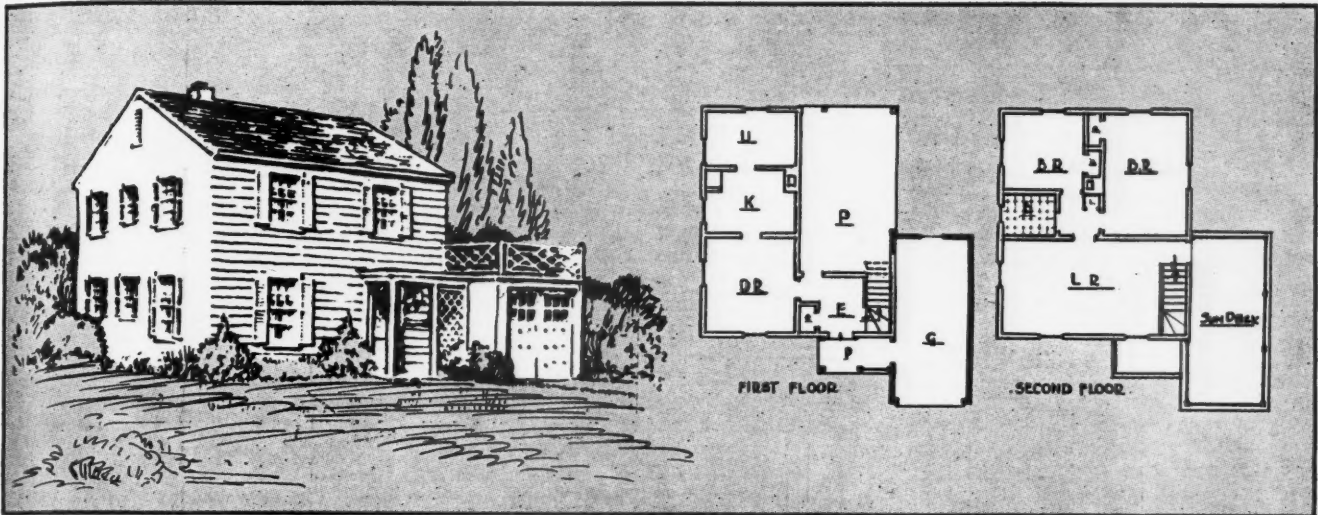
THIS modern home has an unusual exterior and plan. The basement is brought up out of the ground and built of wood, thus saving excavation and masonry. The house is approximately the same floor size and contains about the

same cubic contents as the average two-bedroom bungalow with basement, but conserves some of the cubic contents frequently wasted below ground. An unusual departure from the conventional plan is the living room on the second floor. The first floor contains hall, dining room, kitchen, utility room and space which may be used either as a garage or porch. Hinged plywood panels on two sides and the end door open the garage for use as a porch.

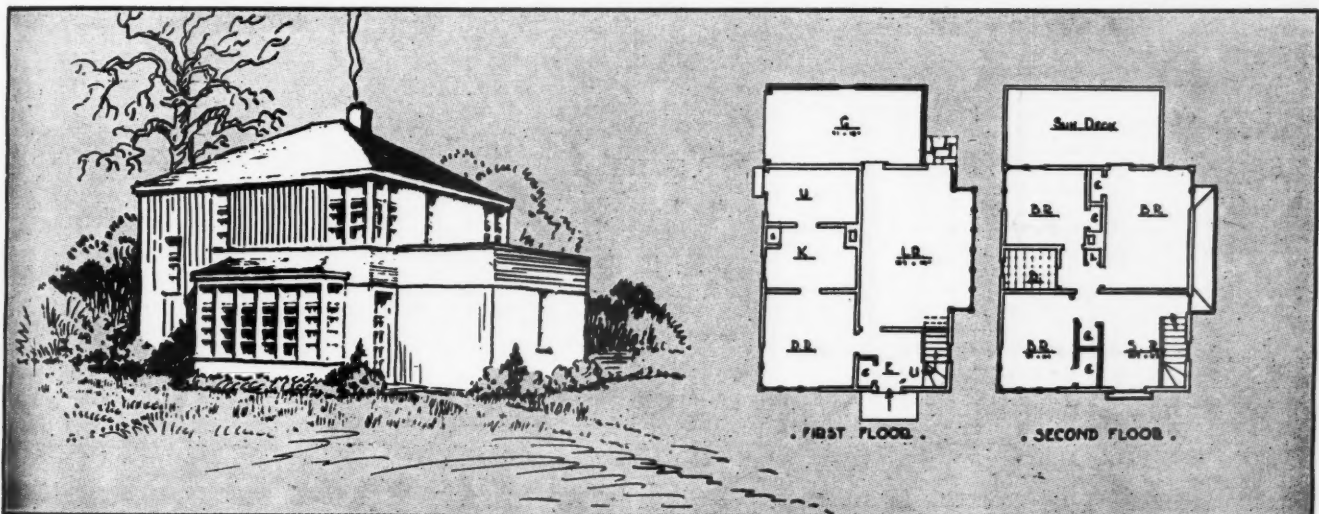




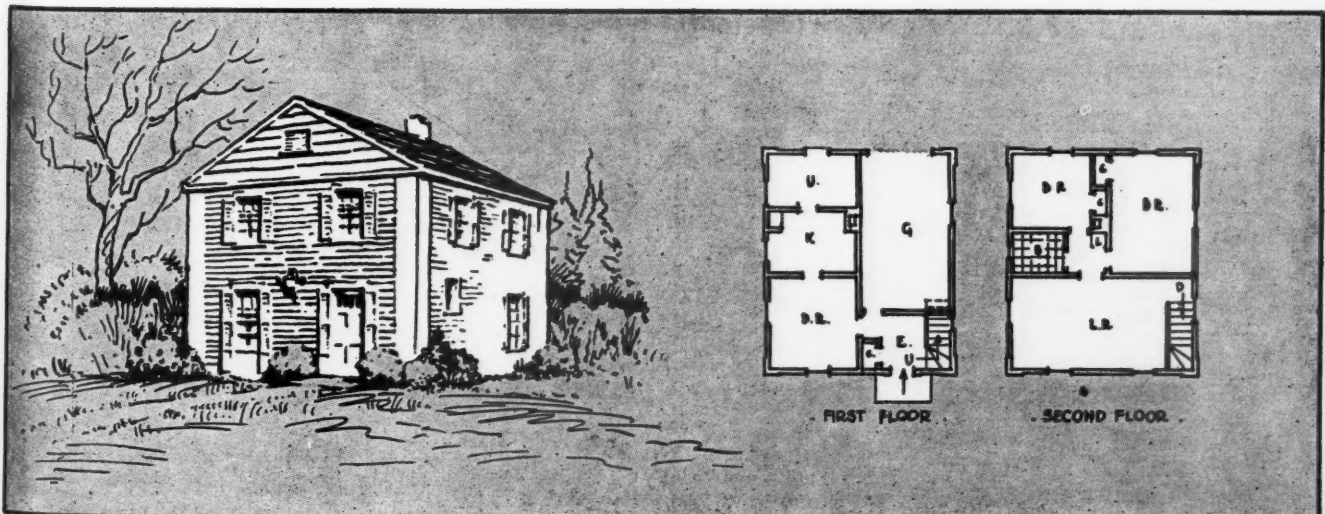
## VARIATIONS OF HOUSE NO. 5



5A—This variation illustrates the addition of a front-opening garage which permits the original combination porch-garage area to serve exclusively as porch. A different exterior is also shown. There is convenient access to the front hall and living quarters.

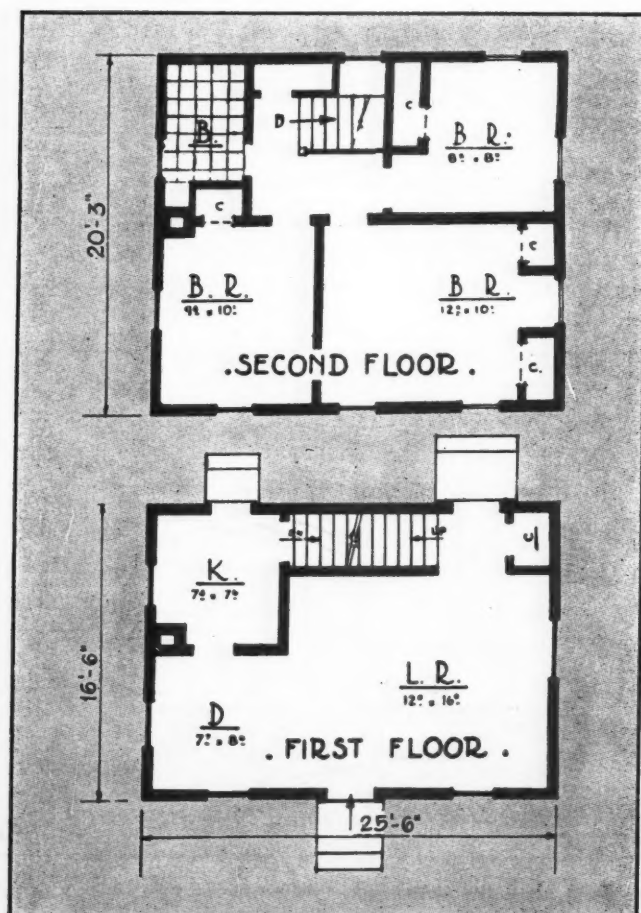


5B—Using the original porch-garage as a living room and dividing the upstairs living room into two rooms produces a three-bed-room plus sewing room or study home. The new garage may or may not be added.



5C—The floor plan of this adaptation is identical with No. 5, but the exterior substitutes conventional windows and a more classic colonial wall treatment for the corner openings of the original. This exterior may cost slightly less.





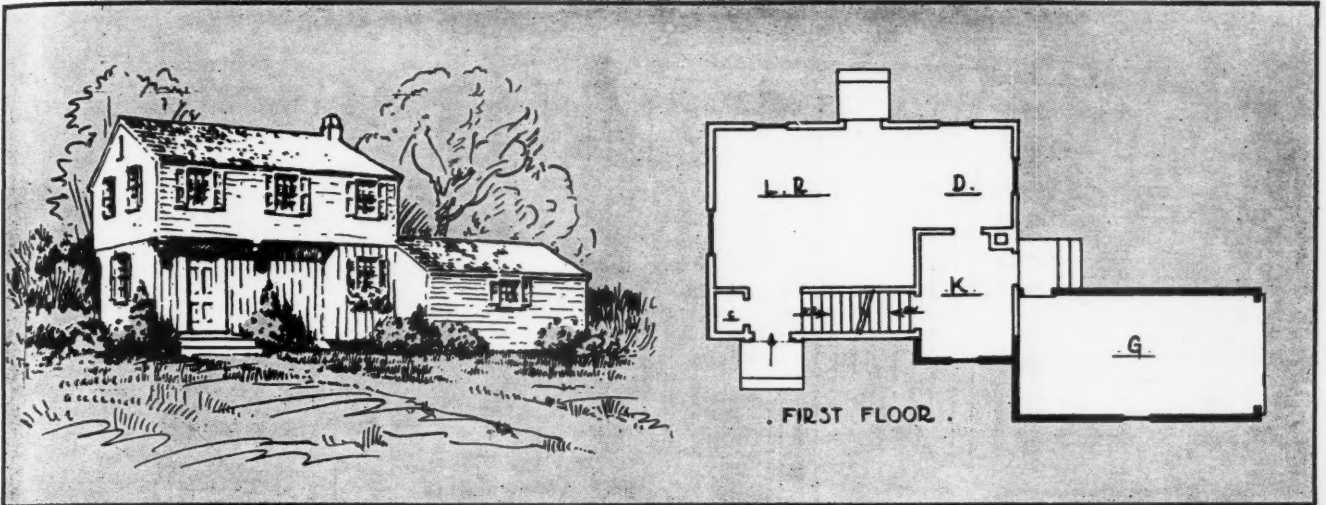
## HOUSE NO. 6— Economy Below, Efficiency Above

THIS is a compact efficient six-room home which provides three-bedroom facilities on a ground floor and foundation size ordinarily used for a five-room house. The overhanging second floor reduces the cost of foundation masonry, excavation and similar basement items without reducing the area of essential living quarters.

The house is in the New England architectural tradition and offers facilities for a good sized family at a much lower rate than most six-room houses.

This home will fit three ways on your lot as the front, back or end may be put to the street.

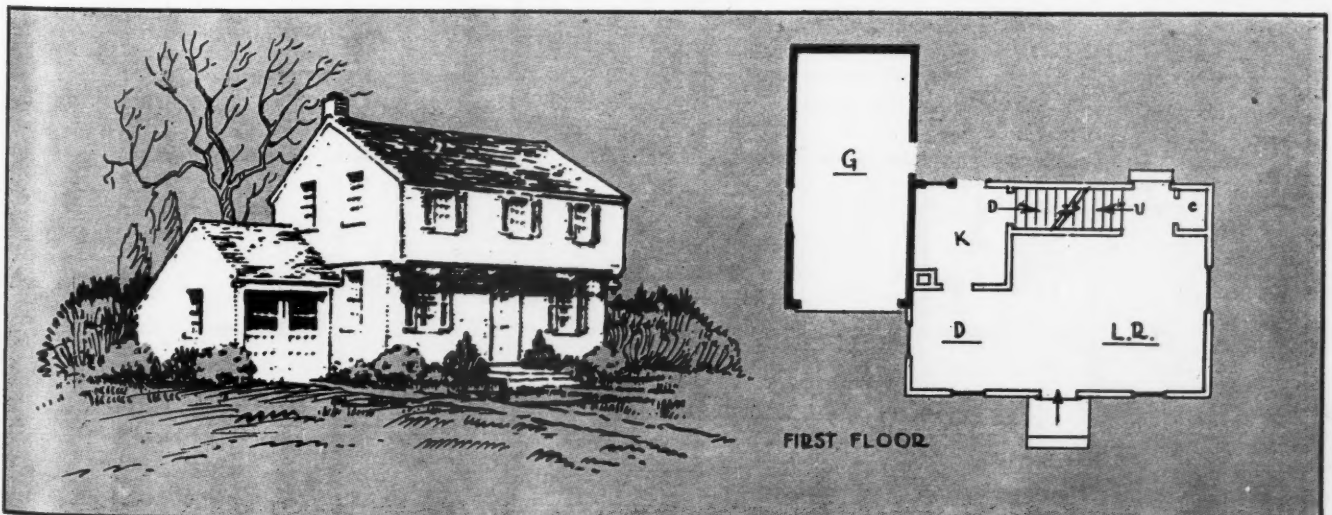
## VARIATIONS OF HOUSE NO. 6.



6A—If your lot is wide, and you wish your home to look long-on-the-street, you may turn the nominal "front" of the house to the garden in the rear and add your garage lengthwise. Note that in this case the kitchen has been extended out under the overhang.

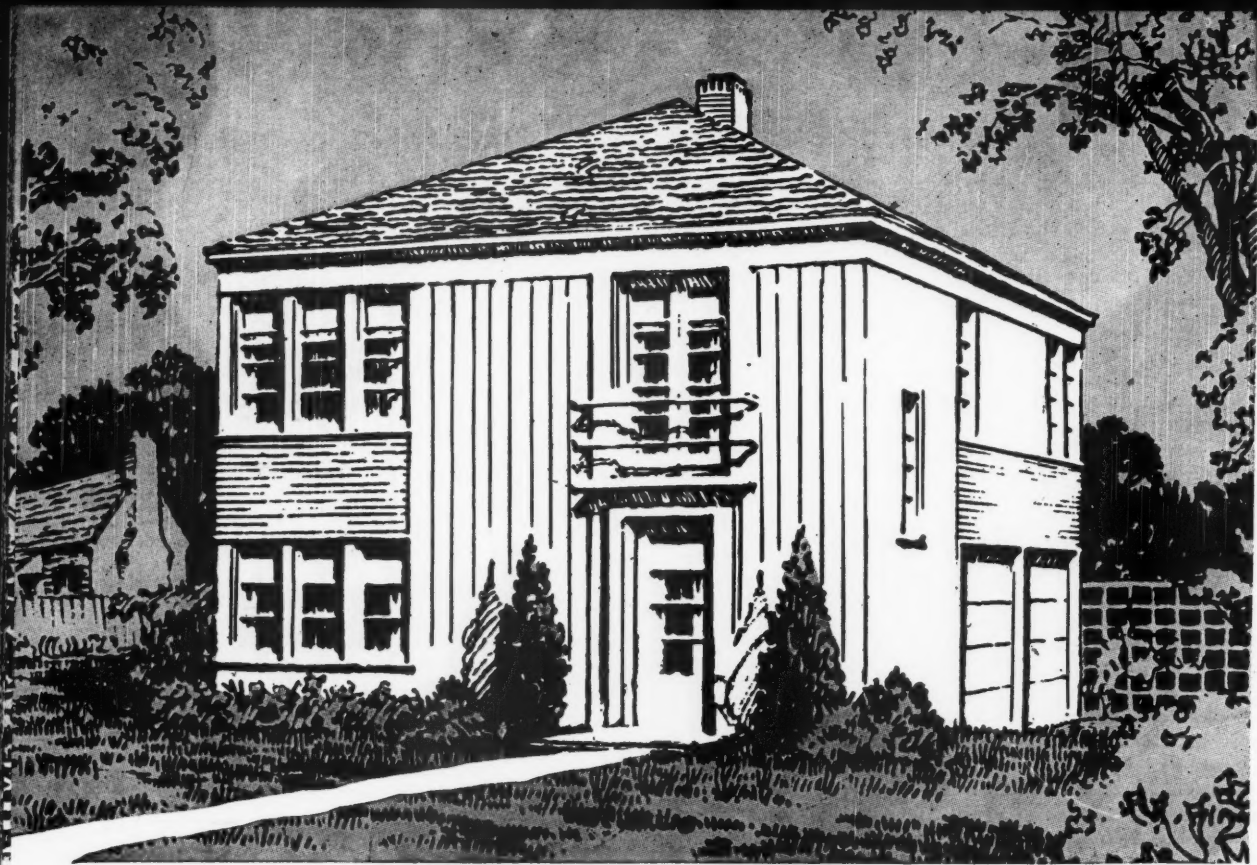


6B—One rendering of No. 6 calls for a large, decorative Williamsburg type of chimney. It shows the house placed on a narrow lot, the exposed chimney adding an interesting architectural feature. The outside chimney and fireplace in the living room are possible in any of these houses. The addition of a side porch (left, above) offers another variation.



6C—For the narrow lot, a practical method of attaching a garage to No. 6 is door-to-the-street on the kitchen end. If built on level ground, the kitchen door may go directly into the garage.

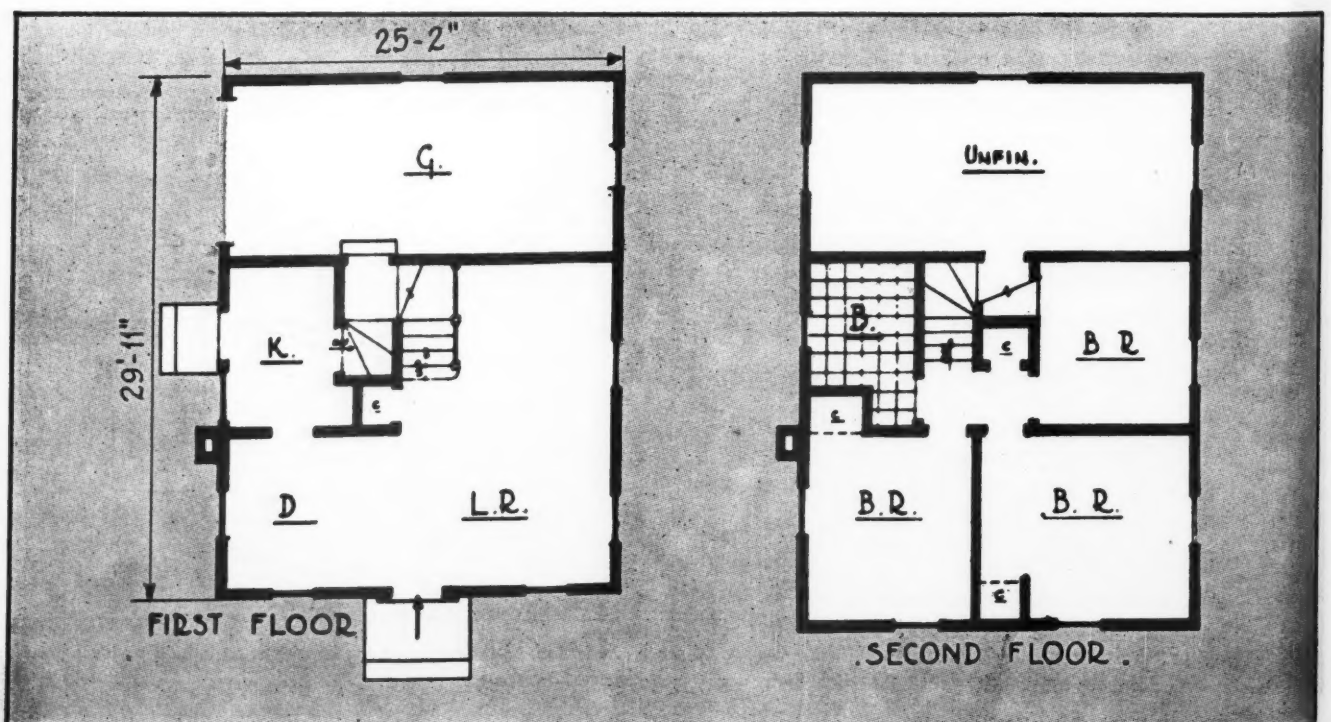




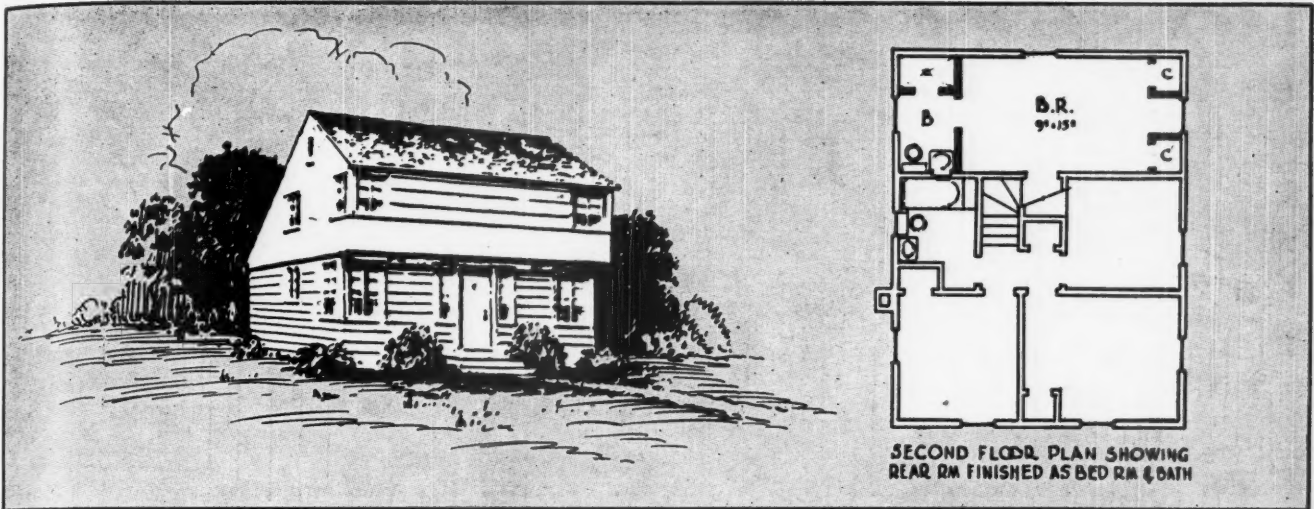
## HOUSE NO. 7—Most House at Least Cost for Large Family

APPLYING the same principle of small foundation area as in House 6, the designers of this home have added a garage which allows even greater second floor living space by carrying the roof high at the back in salt-box fashion.

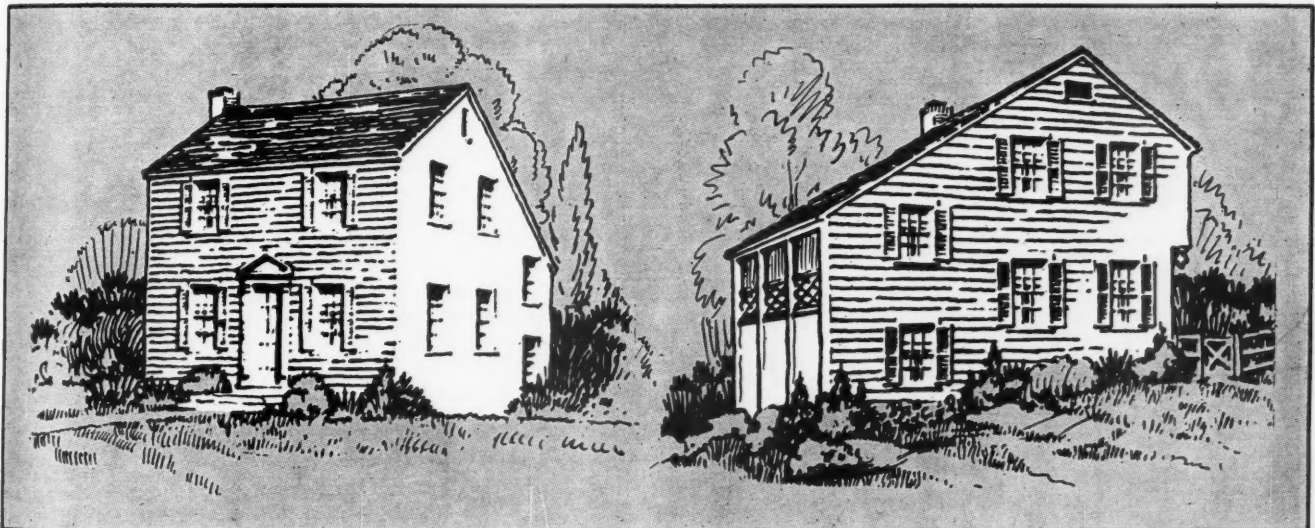
This permits an extra-large rear room over the garage which is reached from a half-landing in the main stairway. This space may become an extra bedroom, bringing the total for the house up to four, or it may serve as storage or play area. This house offers the ultimate in low-cost construction for a large family. If the fourth bedroom is finished, the cost per room for No. 7 will probably be the lowest of all eight houses.



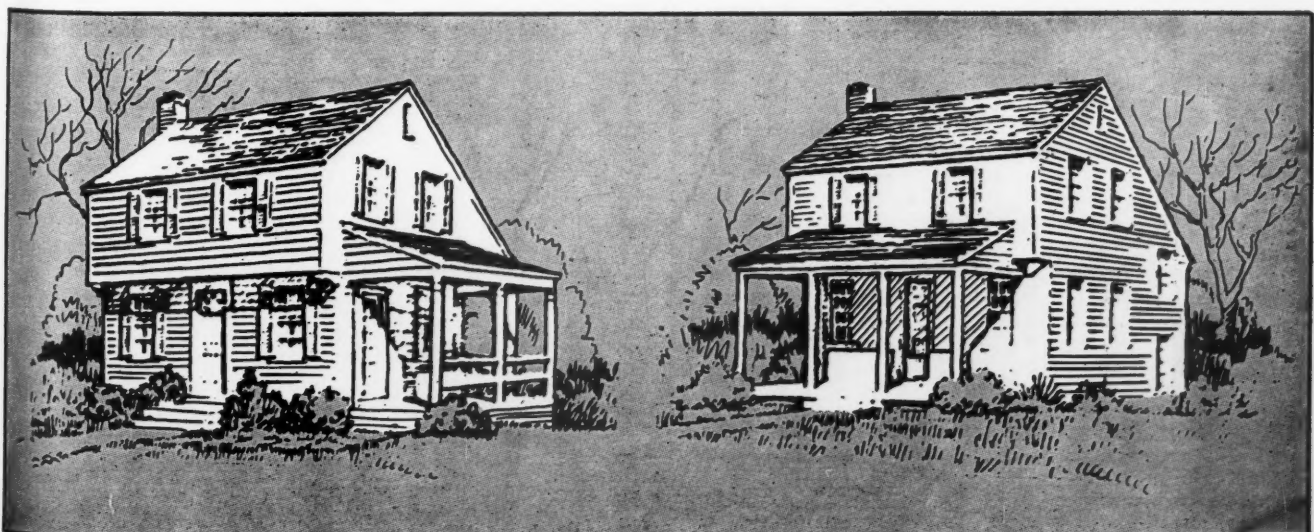
## VARIATIONS OF HOUSE NO. 7



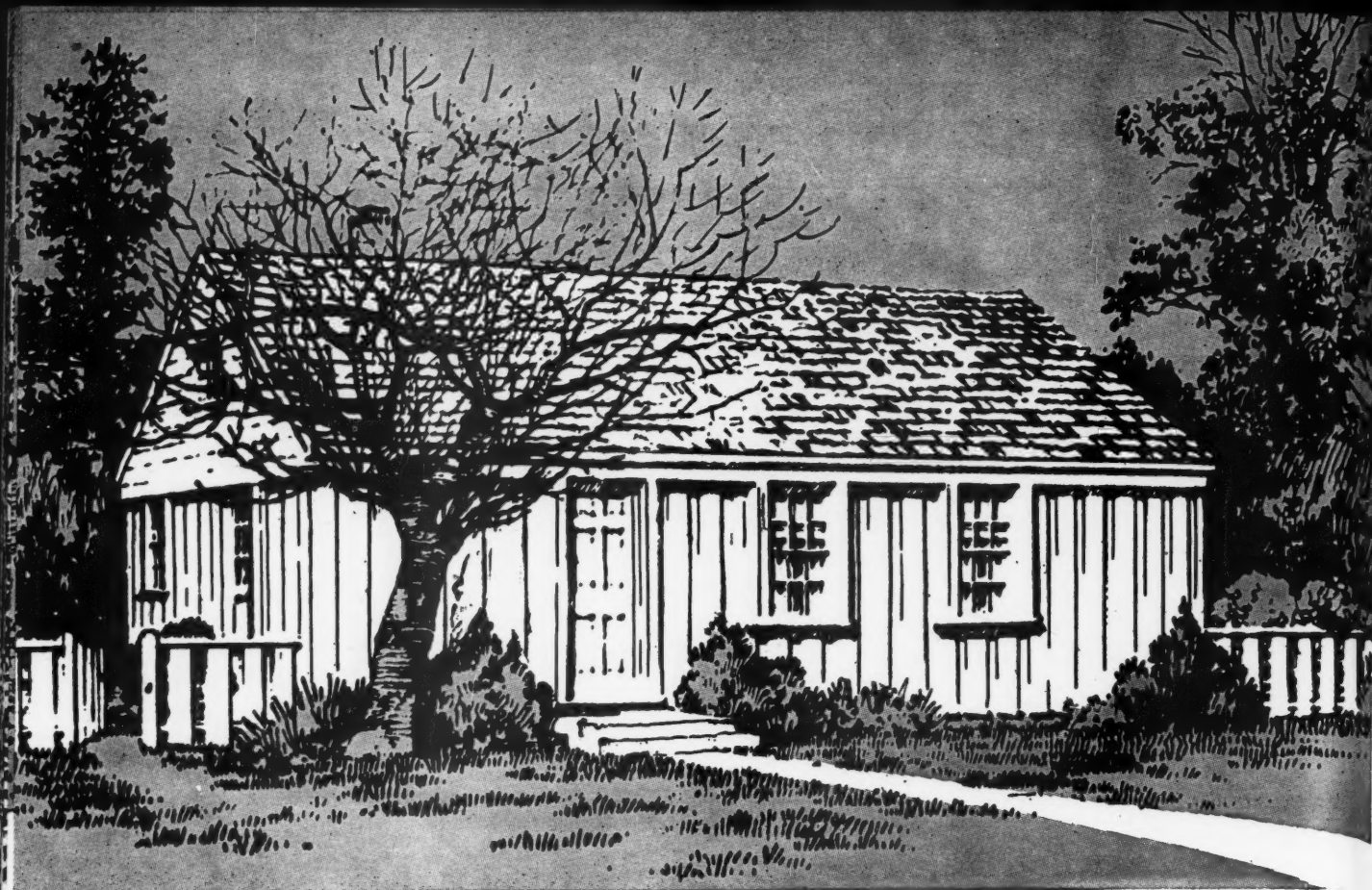
7A—The floor plan illustrated shows the completion of the room over the garage and the addition of an extra bathroom. The exterior above shows the effect of modern treatment.



7B—Because the house is already ample in number of rooms, the other variations illustrated on this page are largely confined to exploration of exterior treatments. The exteriors above show use of the space above the garage as a porch, and the extension of the ground floor with the overhang eliminated. The two exteriors below illustrate front and side porch possibilities.

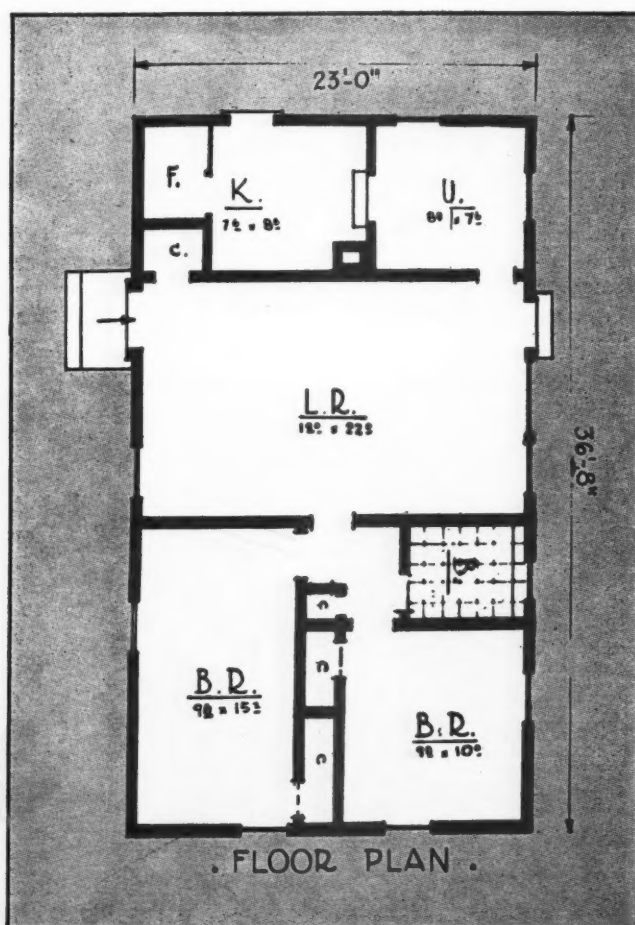






## HOUSE NO. 8—Urban, Rural or

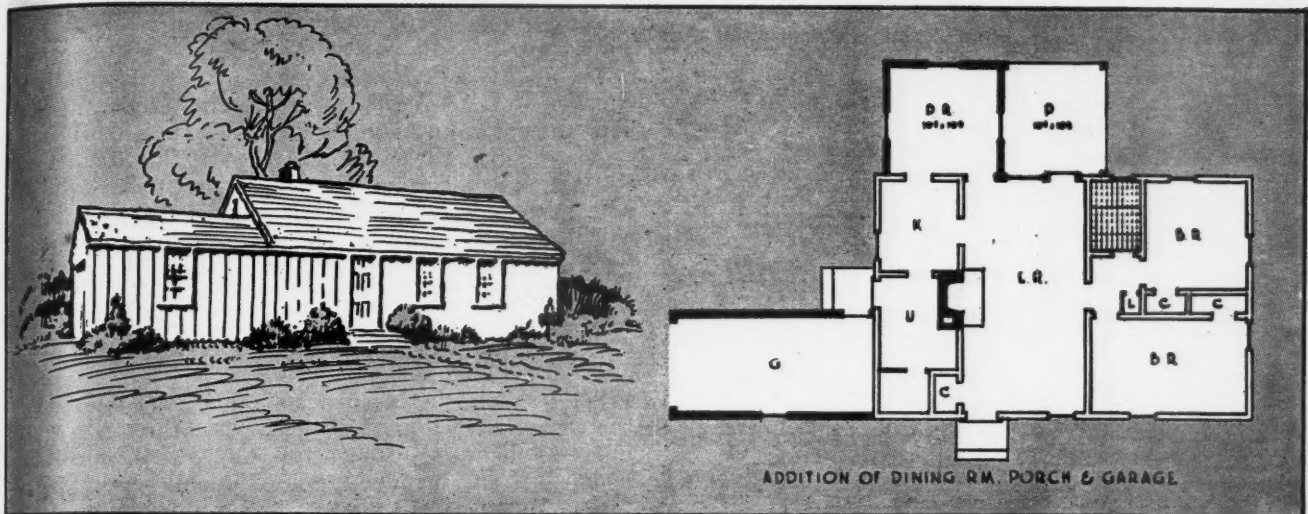
## Summer Home



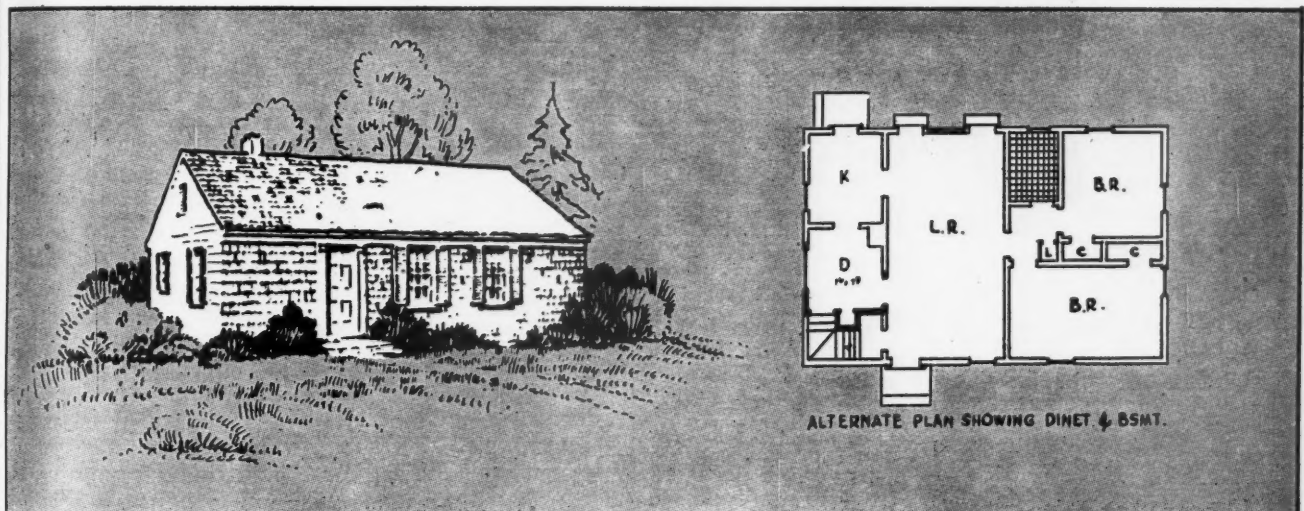
THIS spacious plan is admirably suited to any city or suburban lot which will accommodate a 40-foot house. The layout which includes a "straight-through-the-house" living room also makes it especially suited for use as a recreational home for seashore, country or the mountains. This wide suitability makes it ideal for demonstration by many local groups to show the public how much house is today available at low cost. This floor arrangement allows an unusually spacious living room for a two-bedroom, single floor plan. The house is well adapted for the studio type living room.

A fireplace is easily and appropriately added along the living room wall where the chimney is now located. If the house is built with a basement, the present utility room can be used as a kitchen and the former kitchen then can serve as a charming and cheerful dinette, as illustrated in 8B. The proportions of this design are excellent and the house will look equally well executed in any one of a number of different exterior treatments.

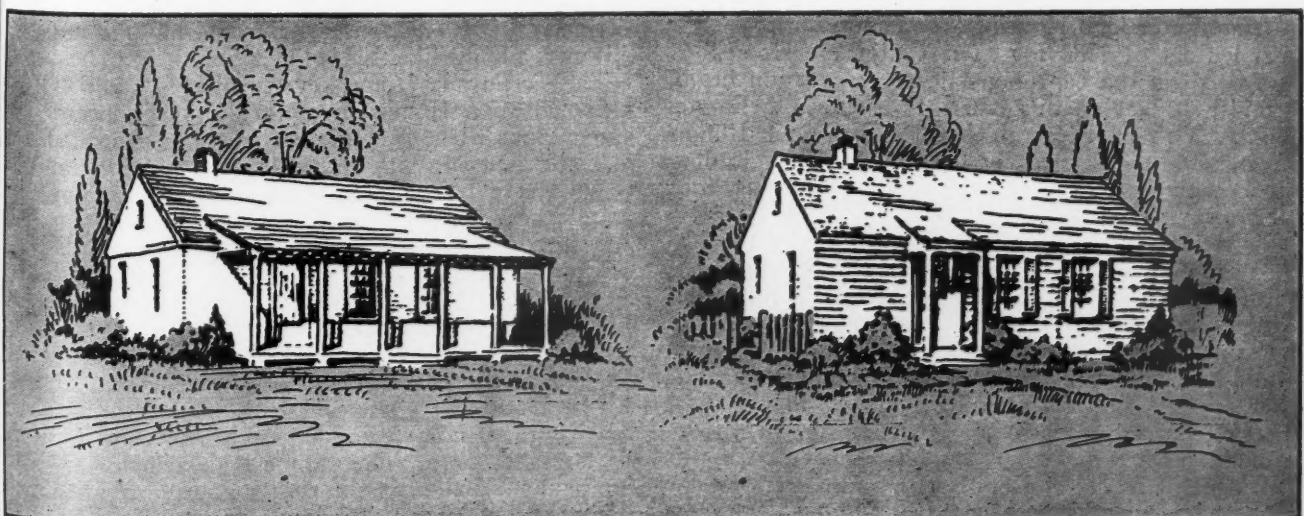
## VARIATIONS OF HOUSE NO. 8



8A—As a larger residence, the addition of a garage, dining room, porch and a fireplace put this edition of Home No. 8 into a class with any attractive suburban home designed to spread over and cling picturesquely to its site.



8B—When built with basement, the original utility becomes the kitchen and the former kitchen serves as a good place to eat. The floor plan above shows just how the cellar stairway works into the plan. The exterior treatment in this case is wood shingles.



8C—(Left) Log cabin siding and a real western porch have changed this design into a ranch house. (Right) A small covered entrance, plus horizontal wood siding, turn the house into a trim colonial cottage.



## "Certigrade Home"

The lot, 117 x 62 feet deep, was purchased from W. C. Ames of Rosslyn, Va., with title guaranteed by the Real Title Corporation, Arlington, Va. The neighborhood is an excellent one with many homes in the \$15,000 and \$20,000 class. The lot is at the summit of a slight hill with perfect drainage in all directions.

The loan covering the Certigrade Home was made by First Federal and Loan Association of Arlington, Va., guaranteed up to 90 per cent by the Federal Housing Administration. This is the very first loan issued under the new amended Federal Housing Administration Act of 1938.

All transactions in connection with the building of the Certigrade Home will be handled through regular business channels. Contractor A. C. McMillen of Clarendon, Va., has arranged to purchase all building materials through Murphy & Ames, a retail lumber dealer of Arlington, Va.

"We cannot emphasize too greatly," declared W. W. Woodbridge, manager of the Red Cedar Shingle Bureau, "that every action we take in connection with FHA is on a definite policy of routing all building purchases incident to the nation-wide housing program through the 20,000 established retail lumber dealers."

Members of the United States Senate were given a preview of what the lumber industry proposes to do to stimulate home building, when Senators Homer T. Bone and Lewis B. Schwellenbach, of Washington, displayed in the Senate Chamber on Feb. 23 a scale model of this Certigrade Home. Senator Bone explained it on the floor of the Senate, praising this builder-dealer small house program as hopeful of real results for low-income families. "These houses should not be confused with prefabricated houses," he told the Senators, "because they are to be built under plans which are to be given to contractors all over the United States. This model on my desk reflects the best that all these architects were able to produce in the way of an ideal small American home. This house lends itself admirably to mass production. I presume some features might be varied according to the taste of the individual, but it seems to me this crowd of builders in the United States has offered something really worth while in the plans of this beautiful little house. Here is a chance for the average man to have a lovely home at a cheap price. Certainly when one contemplates the horrific rents in this city, a home like this is like a breath from heaven."

The Certigrade Home keys in nicely with the 1938 Demonstration Homes Program of the lumber dealer associations. Upon completion, it will be dedicated and officially opened at the annual convention of the National Retail Lumber Dealers Association in May. It marks the start of a nation-wide small homes campaign sponsored by the 20,000 retail lumber merchants who are members of the National Retail Lumber Dealers Association. Members plan to duplicate the home in hundreds of communities throughout the country.

The carefully conceived floor plan of the home reveals a livable arrangement of living room, dinette, kitchen, two bedrooms and bath, with heating plant and laundry situated in a utility room below the level of the main floor. The garage is detached.

Frank Carnahan is showing his customary enthusiasm for this business building program.

"I feel confident," he wrote on Feb. 17, "that from the response we have already received and the fact that the National Plan Service has already sold some plans for



**W. W. WOODBRIDGE**, Manager, Red Cedar Shingle Bureau  
HIS ORGANIZATION captured "Loan No. 1" from the Federal Housing Administration under the amended 1938 Act to build the "CERTIGRADE home" in Arlington County, Virginia, thereby launching the federal government's gigantic housing program.

**G**IVEN the splendid co-operation of the National Retail Lumber Dealers Association and their energetic secretary, Frank Carnahan, the Red Cedar Shingle Bureau scored a heavy victory for low-cost, well-constructed homes when it secured "Loan No. 1" from the Federal Housing Administration under the amended act of 1938 for "The Certigrade Home," as illustrated on the page opposite. Construction began in mid-February on this house on a site in Arlington County, Va., at Eleventh Road North and Illinois Street, within 100 yards of a trunk highway leading into Washington, D.C., and the White House only four miles away.

Plans for this model home were drawn by the National Plan Service, Inc., of Chicago. Specifications call for roof of 16-inch No. 1 Certigrade red cedar shingles factory-stained moss green, and sidewalls of the same grade and length shingles laid double course with 12 inches exposure. Walls will be painted white after application. All framing lumber will be No. 1 Douglas fir, as will also all joists, studding, rafters, foundation plates and sills. Sheathing lumber and rough flooring will be No. 1 Douglas fir. All exterior trim, door and window frames, window and sash sills and interior finish and cabinets will be western red cedar. Finished floors will be clear vertical grain western hemlock.

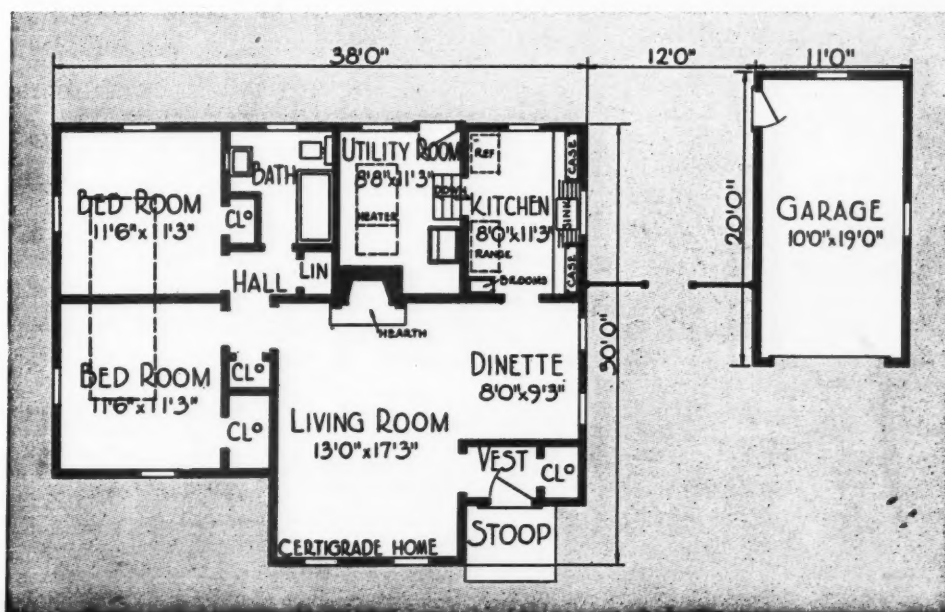
# Wins Loan No. 1, New FHA Program



duplicating this house at other points, the dealers generally are going to pick this thing up and run away with it. There has been a crying need in our industry for material of this type, and demonstrations of this kind, and we appreciate the splendid co-operation the Red Cedar Shingle Bureau has given us in coming forward with this proposal. It is going to be strictly a retail lumber dealer program, and every dealer who goes into the building of one of these homes will receive all the publicity and will be in charge of the project.

Any dealer who wants to go into the program may be assured that the Red Cedar Shingle Bureau will not only co-operate with him in publicity and other matters, but will to the best of its ability furnish men locally to the dealers to supervise and assist.

"It might interest you to know that the contractor who was induced to go into this project in Arlington is already developing plans for 53 similar Certigrade shingle houses. Of course, the models will be varied slightly in some respects so as to avoid monotony.



PERSPECTIVE and floor plan of "The Certigrade Home" now building in a Washington suburb.





## Builders Meet Problems in Golden Gate International Exposition

**E**NGINEERS and architects of the Golden Gate International Exposition have had many problems to meet since the \$16,000,000 construction program on Treasure Island was started.

The 400-acre island itself was man-made for the site of the Exposition which will open in San Francisco Bay in February, 1939. Starting with a shoals in the San Francisco harbor, the land for the site was dredged from the bottom of the bay. This huge job involved the placing of 20,000,000 cubic yards of sand within a 17,760 foot sea wall. For the wall 287,000 tons of rock were required. Work has been carried on by U. S. Army Engineers under a W.P.A. grant of \$3,800,000. Eleven dredges were employed and more than 16 months of continuous pumping brought the Exposition-airport site to final completion this summer.

Completed, the island is a flat expanse of firm sand rising 13 feet above mean low water and bound within rock walls. Buildings on this new island, 5,520 feet long by 3,400 feet wide, have already begun to loom up on the harbor horizon.

Following the close of the Exposition, Treasure Island will be used permanently as an airport. For this reason construction combines permanent and temporary structures. Some of the buildings are being constructed so that they may be used for hangars and an air terminal when they have served their present purpose.

The permanent buildings are grouped at one corner of the island to leave the greatest possible runway space for the landing area. Two steel and concrete hangar buildings, each 287 by 335 feet and each costing \$400,000, will serve the Exposition as the International Palace and the Palace of the Fine and Liberal Arts and then, with minor changes, will house the planes that will make their base there.

Architecturally the structures represent a new type of design called "Pacific," a combination of influences from both the occidental and oriental shores of the Pacific.



A NEW TYPE of three-hinged arch employing a strap and pin joint was used in the construction of the exhibit buildings of the 1939 Golden Gate International Exposition on Treasure Island, San Francisco Bay. These structures measuring 200 by 886 feet, 200 by 415 feet and 178 by 753 feet, in pairs, rank among the largest wood frame buildings ever erected.

The harmonious use of great masses was accomplished in the Exposition by a series of courts, gardens and towers between the masses. The front elevation will be broken up by two main gates whose towering portals cut deep recesses into the horizontal of the buildings.

Walls for the huge hangars were poured after the roofs had been completed. The walls hang from the steel framework, being cantilevered outside the lower pins of the three-hinged arches to counterbalance the weight of the roof. In pouring concrete, the forms were suspended directly from the steel framework, a rod running from purlin trusses to I beams beneath the forms. The other end of the I beam was shored up from the ground. This acted as an automatic jack in supporting the forms and permitted arches to rotate during construction without stress on steel or concrete. Steel was erected by skid derricks.

Completed, each side wall is 335 feet long and 58 feet high, weighing 1,703,000 pounds with corner pylons. The new type of design was worked out by Exposition engineers to save steel and concrete by the virtual elimination of arch thrusts. Hangar doors, 200 feet wide, 40 feet in height, are designed to be extended to 65 feet at the centers to admit larger planes which may be designed in the future.

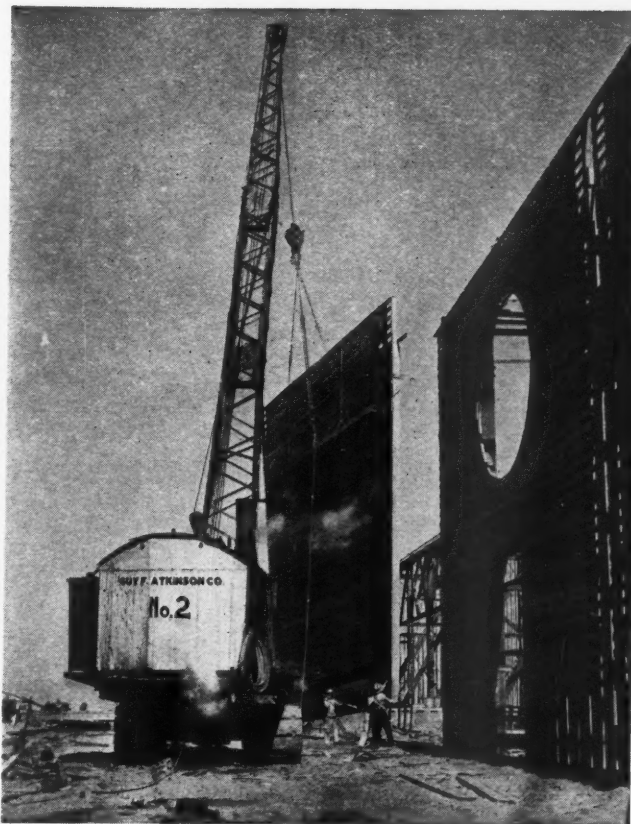
Steel arches in the hangars are of the three-hinged joint design and walls are cantilevered outside the lower hinge pins, thus counterbalancing the weight of the roof. With this design the tension on horizontal ties is reduced to 18,000 pounds as against 74,000 pounds without cantilevering walls. In the erection of the hangar trusses vertical members resting on the pins were held in place by guy wires while booms lifted half sections of the truss into place. Members slid into position by the aid of jacks placed under the shoring. 9,800 yards of concrete were used on the two buildings.

Foundation for the hangars consists of 1,607 untreated piles with a basement garage of flat slab surfaces to be used for parking when the structure is completed. Approximately 11,400 piles of concrete and 1,000 tons of steel were used on the job.

A third permanent building will be the Administration headquarters for the Fair, then the Air Terminal. Semi-circular in shape, three stories high, it was completed last autumn at a cost of \$800,000. It will contain postal and air express terminals, passenger facilities, hotel and dining room services, public observation galleries, complete meteorological stations and all airport appurtenances for the handling of passengers and packages. Five ramps will pierce the building so that consignments may be hand-trucked through from unloading docks in the basement garage to transport planes loading at the edge of the airport.

The Fair is planned on two main axes which will intersect at a Central Court and Tower. The walled city idea is combined with a system of interior courts which bring out the effect of grandeur and majesty and long perspectives. The main entrances, which face the San Francisco skyline, are distinctly oriental in character, using the Malayan pyramid idea with "elephant towers" and howdahs as a climax. The employment of many oriental motifs, in combination with broad and rather modernistic planes, is the distinguishing mark of the architectural design for the Golden Gate International Exposition. The use of masses was designed to offset the immensity of the setting and the tremendous towers of the two greatest bridges of the world.

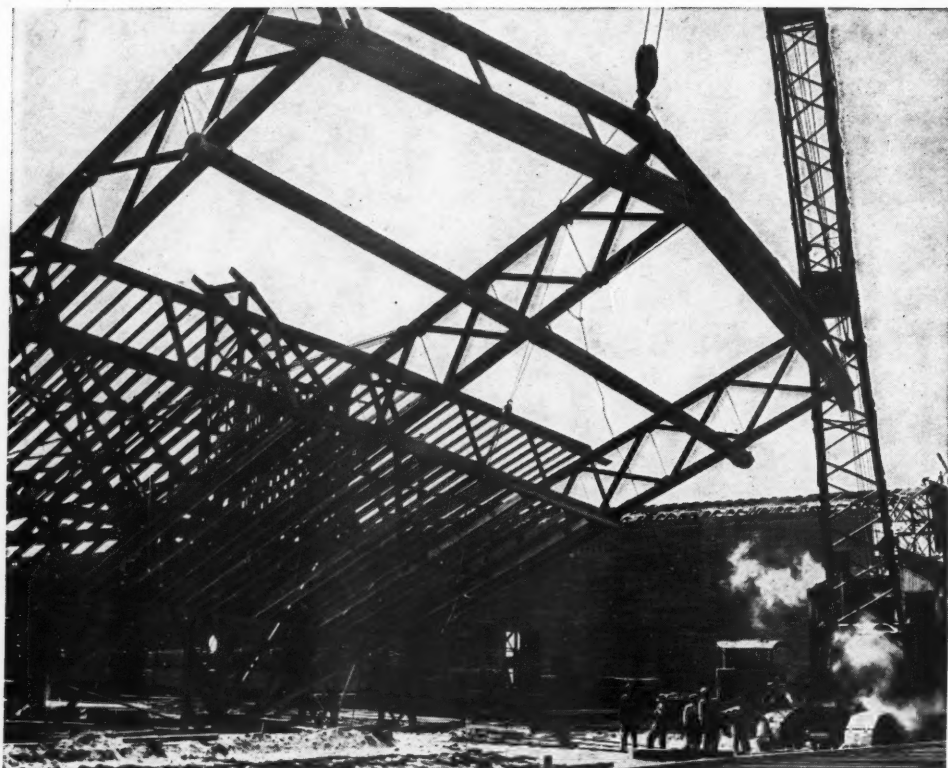
Finished, the buildings will have 1,000,000 square feet of exhibit space, two concrete hangars, three-story concrete airport terminal, towers, amphitheatre, ferry slips and terminal, pavilion buildings and many other struc-



ABOVE: Sidewalls for the huge exhibit palaces were framed on the ground and erected in panels. BELOW: The Central Tower, 400 feet high, which will dominate the entire architectural design of San Francisco's 1939 World's Fair on the Pacific.







200-FOOT end set-back walls, framed on the ground and erected in 66-foot sections. This structure, "Vacationland," one of the main exhibit buildings of the 1939 Golden Gate International Exposition on San Francisco Bay, measures 200 by 886 feet.

tures. It is estimated that there will be 1,000,000 square feet of roof area on the buildings constructed on this 400 acre plot. Because the roadway via the Yerba Buena island was not completed, all the material used in the construction had to be brought to the island by barges. 340 tons of gravel and 70 tons of asphalt were used to cover 16,020 square feet of roof surface. This material was brought by water from the plants at Pittsburg, California, and from Alameda. Material was unloaded from the barges by motor-driven trains of small cars running on a gang plank and by stiff legged derricks.

Among the difficulties which had to be met in the construction of the buildings was the stiff wind which blows in from the Golden Gate in the afternoon. Consequently work during the summer months started at 6 a.m. and stopped at 2:30 p.m.

A further difficulty was the construction of expansion joints at the ridges of the roofs to allow the buildings to roll with the wind. For this the joints required dry

sheeting and felt to be laid under the joint and three-ply 30-pound felt and gravel above the joint, giving practically two roof surfacings at this point. When finished the roofs are sprayed with aluminum paint to harmonize with the general scheme.

Safety guards are being employed in every possible way with safety harness belts and other devices for the protection of the 400 workers.

The soft sand was a problem in the construction of the

buildings. To avoid possibility of danger from hastily erected temporary scaffolding, the contractors built permanent yet portable frame scaffolds. These are heavily braced by ribbons and diagonal braces. This well built scaffolding is constructed on a log base in 40 foot sections, approximately 30 feet high. Necessary extensions are added as they are required and the sections are easily dragged over the sand by tractors.

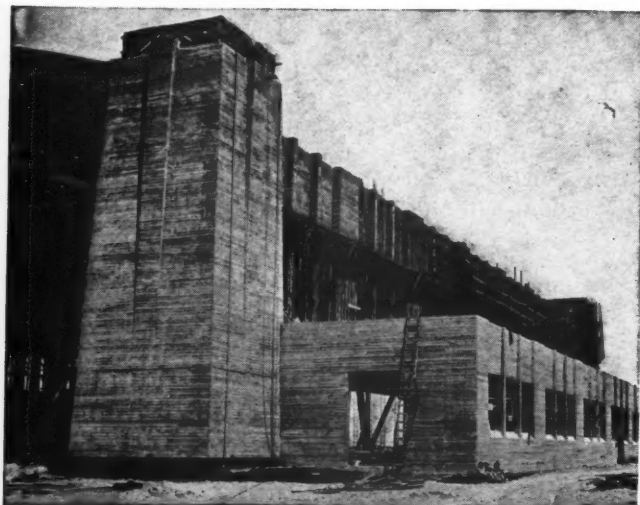
Building of the tower will be a hazardous part of the work. This 400 foot central tower is being made of concrete with steel frame. Plans included the use of planks between intermediate floors wherever practicable. Where planks are not used a safety net will be stretched across the interior and raised and lowered as needed. Work will be done on the inside as far as possible.

Practically no concrete is used on the frame, temporary buildings. Sidewalls rise directly from timbers set between piles. For arch ties 6 inch by 8 inch structural pieces were used. Timber floor construction is supported on spread footings directly upon the ground. The arch-construction and strap and pin design for arch joints is employed. This is a new type, designed by John J. Gould, chief constructional engineer for the exposition, which will greatly lessen the job of dismantling.

Six exhibit palaces measuring 886 by 200 feet, 415 by 200 feet, and 753 by 178 feet in pairs are being erected. 10,000,000 feet of lumber including 12 by 16 inch by 78 foot structural timbers are used on this contract. Exhibit buildings are also of the three-hinged arch design.

No trucks, elevators or hoists will be used in the construction of the exhibit palaces. Lumber was brought in by railroad barges and rolled over 1½ mile of track to be further distributed by tractor. Heavy timber is handled by boom rigged tractors and lighter stuff hauled on sand sleds. All the roof material is lifted by crane with extension booms.

An architectural commission, rather than an individual architect, is responsible for the design. Originally headed by the late George W. Kelham, A. I. A., the commission is now under the chairmanship of Arthur Brown, Jr., F. A. I. A. Harry C. Vensano is Chief of Construction and W. P. Day is Vice President and Director of Works.



HEAVY concrete walls for the huge hangar buildings of the Golden Gate International Exposition were poured after roof was completed.

# Wall-Board Modernizes Florist Shop

## Pioneer San Francisco Firm Remodels

ONE OF the pioneer florist shops in San Francisco is the Union Florist. Started in 1900 in a downtown district, after the fire of 1906 it was moved to the Mission district where it has remained since.

Styles in store architecture have changed along with the years and the time came when the partners, P. J. Barchi and Edward Corvi, decided to remodel. As it stood, the store was lined on each side with large mirrors and at the back the workroom was separated from the displays with lattice work. At first they planned to finish the interior with stucco and use the mirrors much as they had been before. But the cost of this seemed out of proportion to the result.

Quite by accident they saw an office finished with a composition wood and thought it offered so many possibilities that they decided it would be much newer and smarter than anything else they might use. After consulting with the contractor, Victor Ratto, it was decided to use this material, limiting the cost to \$3,500, including the neon sign outside.

On completion it was found that they also had a sound-proof store; no longer does the rumbling of the street car as it passes interrupt conversations with customers in the store nor interfere with telephoning.

The composition wood has a semirough texture and comes in light and dark shades of tan. That used for the ceiling, a light tan, is cut in squares 10 x 10 inches. The wall boards are larger, being 12 x 16 inches, with some variation in color which gives an attractive effect.

The entrance to the store is at one side of the shop, giving a large window for displays. Here they took out the platform, thus giving the impression of more spaciousness in the store itself, which measures 19 x 40 ft.

At the back of the room they wanted the telephone booth in an inclosed space; so balancing set-offs were built on each side of the room. On the one side is the inclosed telephone, and back of it is a set-in space for the cash register. On the other, is a passageway to the rear of the store. A door leads from the center of the back to the workroom.

The store walls were finished with rectangular blocks of the composition, and at the corners of the set-offs, pieces of the same material were used in one piece, the height of the room. These were beveled in vertical lines, a few inches apart, to resemble columns. Narrow strips of chromium were used at the corners of the room, at the joining of the columns with the walls, around the doorways and the space for the cash register and as a decoration about three feet from the floor around the entire room.

A modified indirect lighting fixture was chosen for the store, while outdoors, a neon sign is hung across the front.

A square mirror, 12 x 12 feet, was hung on the wall next to the window. Then, on the same wall, some feet back, was secured a 6-foot circular mirror cut out of one of the old mirrors. There was still some of the glass left; so strips of the mirrors were cut in different lengths. Then an 8-foot length was set level with the top of the mirror, and strips six feet and four feet long, all of them six inches wide, were placed below. On this side the strips extend toward the rear of the room.

On the opposite wall, near the door were hung another 6-foot circular mirror and a matching group of mirror strips, this time reversing the strips, so that the largest was in line with the bottom of the mirror and the shorter pieces were on the upper side. On each side of the door to the workroom, vertical strips of mirror, three feet and two feet long, were placed.

The floor was finished in a glossy dark green, with a border outlined with white. The covering was run up on the side of the walls for a narrow border and at the floor finished with a slight curve so that there would be no cracks to collect the dirt.

As the shop owners could not find the furniture they needed, they designed that. The desk is movable, so that it can be placed at the left or right side of the room. It can also be used from either side.

At the back of the store were placed two sets of counters—two against the wall at the back and one on each side of the door—and under the ledge is the wrapping paper. In the counters which face the room are the corsage ribbons, made up in bows, in drawers, and boxes for corsages and small flowers. If a corsage or bouquet is to be made up while the customer is waiting, it is made up there. All the large pieces are made up in the back workroom. The desk and counters are finished in an antique glaze, with brown tops.

The store is at a busy transfer point for street cars and much interest was shown in the remodeling which took from four to five weeks. One side of the store was completed, and then the other, so that there was no interruption of business.



REMODELED florist shop in San Francisco uses fiber board and glass effectively for modern interior.





## Cottage Planning Time Is Now at Hand

**T**HIS is the season when most of the planning is done for next summer's cottages and resort homes. Numerous designs are now being prepared for these vacation retreats, and the recent reinstatement of Title I of the National Housing Act carrying provisions for loans on such housing should prove an added stimulus to this class of construction. Details of the regulations on Class C loans under which such properties are made eligible appear in another article in this issue.

As an example of the better type of moderately priced summer quarters suitable for many locations, interior and exterior views and floor plan of a model lakeside home are shown on these pages. It was built within the past year by Builder L. G. Buckles of Fontana, Wis., and is located in the well known Lake Geneva section of that state.

**TWO EXTERIOR VIEWS** of a model summer home built on Lake Geneva, Wis., by L. G. Buckles are shown on this page. In the upper view, entrance to the two-car garage in basement and rustic cedar balcony are seen. At the right, the opposite end of the cottage has a combination dining porch and sunroom wing; this room has plenty of casement windows to make it bright and airy. Exterior of long siding, stone chimney, entrance and roof shakes go well with the wooded site.

The exterior has been given a rustic attractiveness through the use of Shevlin Pine log cabin siding with dummy ends to simulate butt construction on lower logs. McNair hand-rived red cedar shakes on roof, large field stone chimney and entrance canopy supported on cedar posts add to the log cabin effect; the front door is made of cypress planks and red oak cleats held together with lag screws.

The plan provides for five rooms and bath on first floor and large space on the second which can later be divided into extra bedrooms. Due to sloping site, which falls



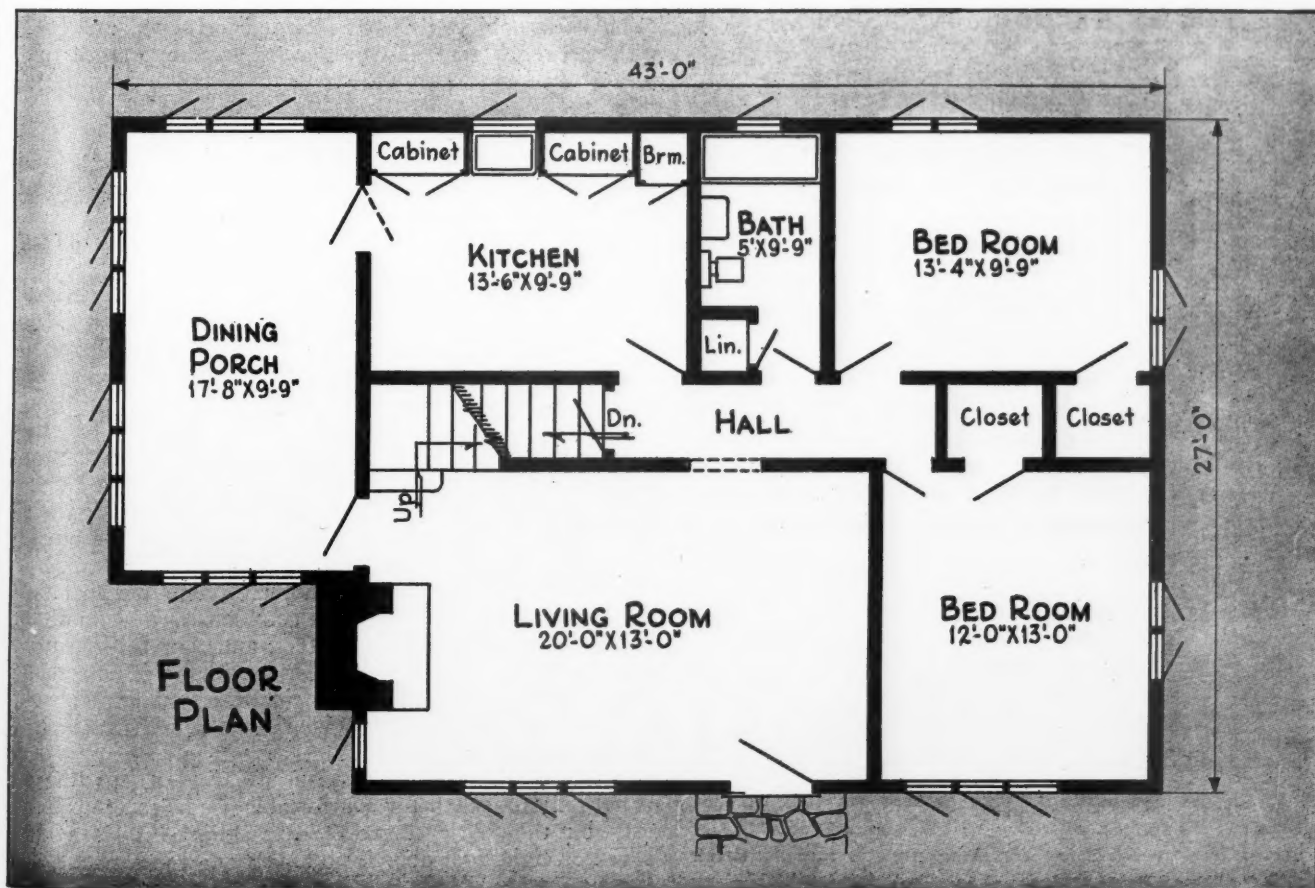


ABOVE: FIREPLACE end of summer cottage living room. Below: Floor layout planned for sun and slope of lot.

off toward the lake, garage space for two cars is located in the full basement. Walls insulated with balsam wool and a warm air heating system allow comfort in winter or summer. The kitchen is equipped with convenient built-in cabinets.

A view of the living room above shows how nicely

the stone fronted fireplace harmonizes with the knotty pine walls, beamed ceiling, Bruce plank flooring and stairway balustrade, the latter having been made by a spar builder. The door near the stairs leads into the large dining porch and sun parlor; casement sash on three sides of this room assure plenty of light and air.





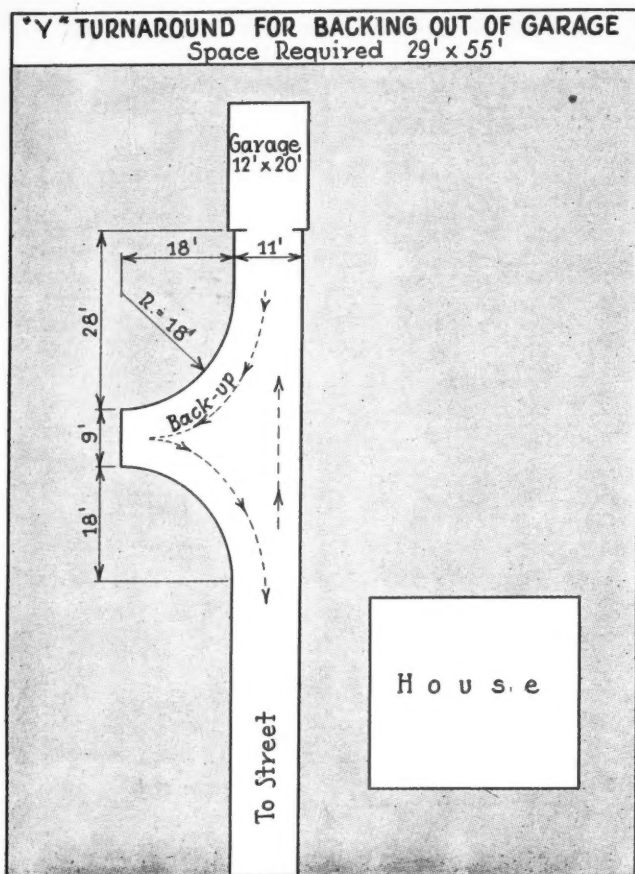


CHART I—When garage is located in back yard, a turn around of this type is suggested to comfortably take care of all sizes of cars. To get the car out of the garage it is backed into the "Y" and then driven forward out into the street as is indicated by the dotted lines.

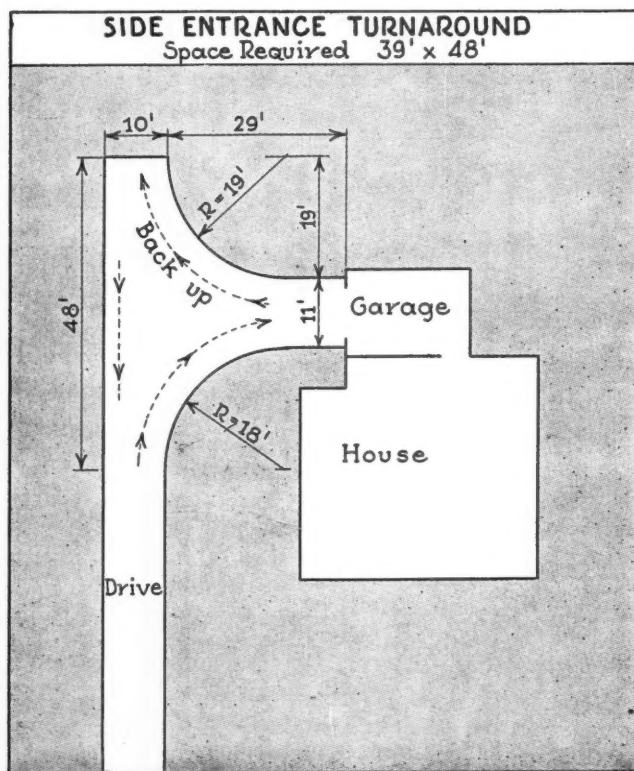


CHART II, above, shows a "Y" turn around for side entrance which allows comfortable operation of any type automobile. Car is backed from garage into "Y", then driven forward to street. Required distance from garage to far edge of drive is 39 feet.

# Practical PLANNING and CONSTRUCTION DETAILS

## No. 2—Drive and Garage Turns

**New Car Dimensions and Space Required for Turning Described in Second Article of Series**

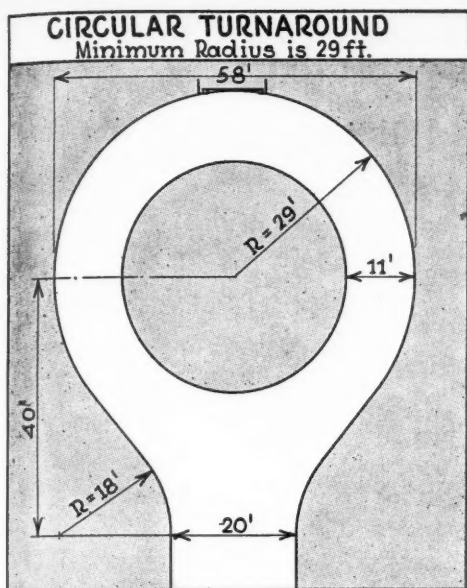
**T**HE modern automobile has outgrown its housing. Few builders realize how recent changes in the size of the new automobile models effect the construction of garages, garage doors, driveways, curves and turn arounds.

This is a subject that has received too scant attention, with the result that a large percent of the garages and turn-around spaces provided are too small for comfortable use.

For example, the 1938 models are not only wider but now have bigger doors which are hinged closer to the extreme outer edge. An average car is six foot wide and the new doors require an additional five or six feet. Thus, the minimum width of a modern garage should be 12 feet, and for a big car, 14 feet.

The new models are also longer—particularly in the small and medium-priced cars. The average car today is 2 feet longer than in 1929. The present Chevrolet is 15 ft. 7 in. long from bumper to bumper, as compared with 13'-2½" in 1929. The 1938 Ford is 15 ft. 4 in., and the Buick 16'-8¼". One of the foremost experts in the country on car dimensions, storage and turn arounds is Gordon W. Ramp, chief engineer of the Ramp Buildings Corporation, who specializes in scientific garage construction and operation. He declares that most builders fail to fully consider the requirements of the modern automobile as to turning around. He points out that the minimum space required for a complete turn around, as indicated in Chart III, is 58 feet, and that for comfort and for larger cars it should be considerable more than that. He has collected the principal car sizes and dimensions from manufacturers, which are given in a table at the end of this article.

Study of the average residential garage shows that it is not only too small for comfortable use by most modern cars, but the doors are greatly over-skimped in size. The seven or eight-foot door is no longer good practice. The minimum should be nine feet. If the turn-around space



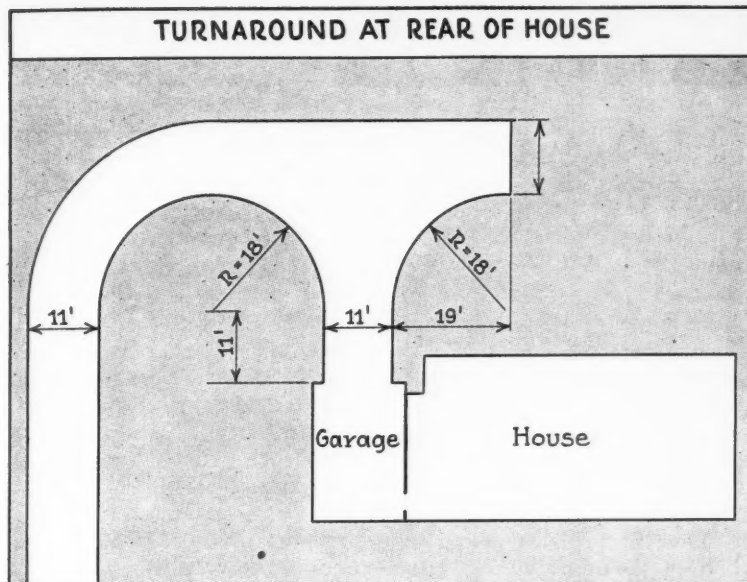
**CHART III**—The minimum outside radius of a circular turn is 29 feet, with an 11-foot driveway.

outside the garage is cramped, the garage door should be made wider. Eight-foot driveways are a source of trouble, especially where the owner must back out. In this case, 12 or 15 feet is much more desirable.

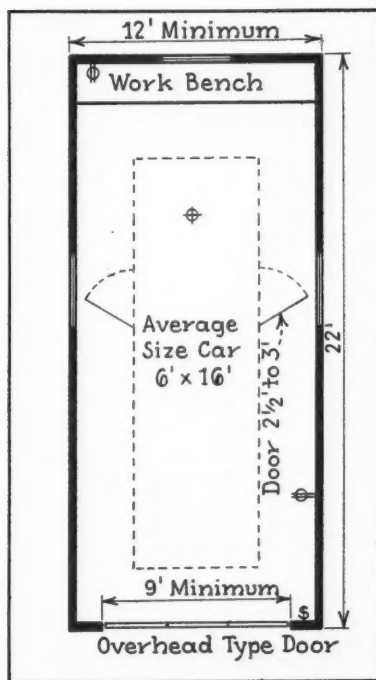
Considering the whole subject of garages in relation to the house, it is, of course, immediately apparent that the best modern planning calls for placing the garage at the front as close to the street as possible, so that the owner can drive directly in and back out a short distance without any turning. This means that the builder must use attractive, architecturally correct garage doors and fit the garage into the architectural scheme. There is a growing tendency to have the living quarters of the house face the rear overlooking garden or lawn areas, so that many people object to cluttering the backyard with a garage and turn around. Thus, the first principle, where conditions warrant, is to put the garage at the front. Where this is not desirable, careful study should be made to discover the space required to get in and out of the garage with ease.

Small houses should not be planned on the basis of Fords and Chevrolets entirely. Many owners of small homes are driving Oldsmobiles, Chryslers and other middle-priced cars that are "big" cars according to old standards and require considerable turn around space.

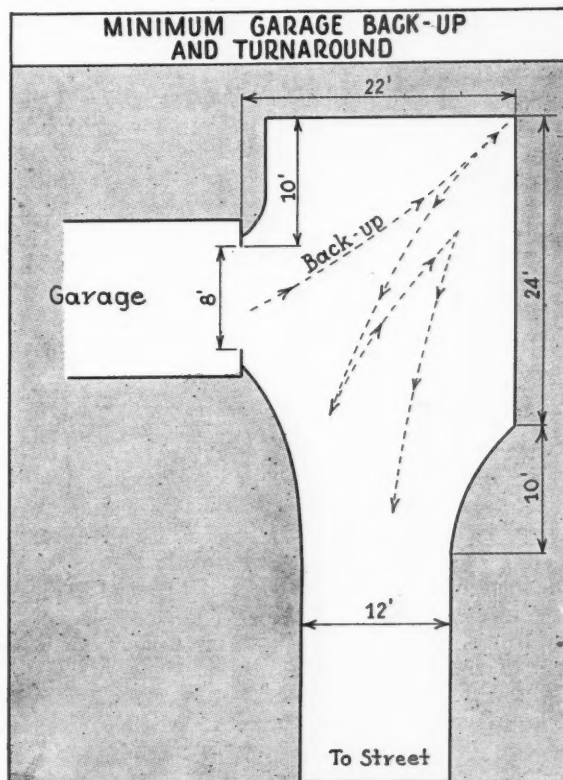
In figuring the curve for a garage or driveway turn, the minimum radius should be 18 feet. Chart II shows a desirable manner of placing the garage at the rear of a house, with side entrance and turn around. The car



**CHART IV—Turn around at rear of house requires a large amount of space. A "Y" back-up is provided for comfortable handling of car in the above layout.**



**TO ALLOW CAR DOORS to open,** garage should be 12 feet wide. If a workbench at end is provided the length should be 22 feet. Garage doors should be at least 9 feet wide for comfortable use getting in or out.



**CHART V**—Shown above is the minimum space that should be allowed. With large cars several backings and turnings may be necessary unless more turn around space is provided.

is driven into the garage forward, backed out into a "Y" and driven forward to the street. This type of "Y" turn around calls for a distance of 39 feet from the garage to the far edge of the driveway. This can be reduced slightly if the garage doors are widened to the full width of the driveway so that the car can be driven in at an angle and turned slightly as it enters the garage.

A minimum type of turn around which, in the larger models calls for some back and forth movement of the car is shown in Chart V. The solution of a more difficult problem—placing the garage entrance at rear—is indicated in Chart IV, but for a comfortable movement of

*(Continued to page 108)*

(Continued to page 108)



# How to Estimate Accurately

## No. 2 in a Series on Practical Estimating—Foundations

By J. DOUGLAS WILSON

Head, Building Trades Dept., Wiggins  
Trade School, Los Angeles, Calif.

**T**HE construction of concrete forms and how to figure materials to make them were discussed last month. Estimating the quantity of materials required to fill a form will be described in this article.

The term concrete is used to denote a properly proportioned mixture of cement, sand and rock. The proportions will vary according to the load to be carried. A foundation for a large building requires a stronger mix than a small residence foundation.

The parts of a foundation are footings, walls, dwarf walls, and piers. A footing is that part of the foundation which is in the ground. It is wide but not very thick, as its purpose is to provide a good bearing for the building. The wall is built on top of the footing. A dwarf wall is any continuous wall inside the foundation. Piers are blocks of concrete used to support posts.

The construction of a foundation will vary in different parts of the country. In the West a basement is seldom constructed, and then used only to hold a small heating unit. The full basement, covering the area of the house, is common in the northern and eastern part of the United States. Basement walls must therefore be included as part of a complete foundation.

If a residence has a full basement it may have supporting lally columns. This type of column is constructed by filling a round heavy metal casing with concrete.

The depth of a foundation wall below the grade will vary, a foot or two being quite sufficient in warm climates, providing the soil has good bearing qualities, while in a cold climate it is necessary to construct the concrete footing several feet below the surface.

The unit of measure, when estimating quantities of concrete, is either the cubic yard or cubic foot, the former being used on large concrete jobs. The cubic foot measurement is best for residence work. When ordering the sand and rock change the cubic feet of material to cubic yards or tons depending upon the local practice.

More sand and rock are required than the actual content of the form. This is due to the voids between the rocks which must be filled. The spaces between the particles of sand, minute as they are, must also be filled. The process of mixing these ingredients together, with the proper amount of water, using the cement as a binder, causes these voids to be filled, the resulting concrete becoming a solid, compact mass which will take less space than before mixing.

No exact rule can be given that will indicate how much more material must be ordered to allow for the shrinkage. The proportions of sand and rock and the size of the rock are factors that affect the fractional part to be added. However, a rule can be given that will give fairly accurate results for an average sized dwelling foundation. Add 1/3 to the form content; then figure the concrete materials on this increased form content.

There are several definite steps to follow when estimating concrete materials.

**1. FIGURING THE CONTENT OF THE FORM:** Multiply the width of the form, expressed in feet (as 8/12 for a form 8" wide) by the depth, expressed in feet (as 16/12 for a form 16" deep) by the length of

the form, usually the perimeter of the building. When the foundation has two parts, as footings and walls, each must be figured separately.

How many cubic feet in a wall 8" wide, 18" deep and 132' long?

**SOLUTION:**  $8/12 \times 18/12 \times 132$  equals  $117-1/3$  or 118 cu. ft. A second way is to find the cross section area and divide by 144. This will give the number of cubic feet per linear foot of foundation. Then multiply this result by the length of the form.

Assume a footing 14" wide, 6" deep and 160' long. How many cubic feet in the footing?

**SOLUTION:**  $14 \times 6$  equals  $7/12$  cu. ft. of footing per linear foot;  $160 \times 7/12$  equals  $93-1/3$  or 94 cu. ft.

Basement walls are estimated the same as a foundation wall. Figure the perimeter of the basement; multiply by the height of the wall and then by the wall thickness. The outside dimensions of the basement are used to find the perimeter. Mathematically this will give a little more than the actual form content due to doubling up at the corners; this extra material is offset by the loss incurred in handling the concrete materials as a certain amount of waste is unavoidable.

To figure a lally column: Multiply the cross section area (diameter squared times .7854 equals area) by the height of the column.

Piers are larger at the bottom than the top. For the small pier often used in residential construction the practice followed is to add the bottom and top measurements together, divide by 2; then multiply by the height. This is not an exact mathematical procedure but is sufficiently close for all practical purposes. If a large number of piers are involved 5 per cent should be added.

How many cubic feet in 28 piers that are 18" x 18" at the bottom and 10" x 10" at the top and 12" high?

**SOLUTION:**  $18 \text{ plus } 10$  equals  $14$  the average size  
 $\frac{2}{1728}$   
of the pier  $14 \times 14 \times 12 \times 28$  equals  $37-1/3$  or 38 cubic

feet in the piers.

**2. ALLOWING FOR SHRINKAGE DUE TO VOIDS:** After the actual content of the footings, walls and piers is figured, allowance must be made for extra material.

If a concrete table is used the shrinkage is automatically allowed. The procedure is to select the correct mix, read the constants that represent cement, sand and rock, and multiply the actual content of the forms by each of these numbers. Convert rock and sand to cubic yards or tons.

CONCRETE TABLE			
MIX	CEMENT (in sacks)	SAND (cubic feet)	ROCK (cubic feet)
1:2:3	.25	.52	.78
1:2:4	.22	.44	.89
1:2:4 1/2	.21	.52	.83
1:3:4	.20	.58	.78
1:2 1/2:5	.19	.46	.92





# Pointers on Balloon Framing

By C. V. OLSON

Carpenter and Instructor  
in Woodwork, Chicago Schools

**A**FTER READING my article last month, I hope you understand I am not trying to teach old dogs new tricks. However, I hope to shake the cobwebs off some of you older journeymen, who have gone through all this period of depression, recession, or whatever you may call it, and wake you up to the fact that your trade is a trade worthy of respect, and that a younger generation will need some help to become as skilled and efficient as you have been.

Have you ever noticed how an experienced man can drive a nail, even after the first blow of the hammer has bent it? If we had to draw all the nails we bent at the start, we would spend much of our time pulling as well as driving them. The grain of the wood at times will change the general direction in which the nail is driven, and as in most framing work, even the first blow is a strong one. The hammer driving in one direction, the grain forcing the nail in another, will cause it to bend, and it is this tendency that must be recognized immediately and the force of the blow changed to conform with the nail. This does require practice but can readily be accomplished if you learn to recognize it.

Nails must be driven from all angles. Down at the feet, overhead, in corners, toenailed, and in all conceivable positions, and aside from telling you to hold your hammer as close to the end of the handle as possible, and getting a wrist movement as well as arm, all I can suggest is practice and to be conscious of the fact that you are driving a nail and that it is to be driven with as few blows as possible. Hammers are made in various sizes and styles, but one having what is known as "bell face" and a claw tempered and shaped so as to draw even small finishing nails without depending upon the head of

the nail, is one to be desired. It has been said it is the last blow of the hammer that tells the tale. In other words, your experience can be estimated by the way you use your hammer. Does the last blow draw up the work? Does it show excessive hammer marks? Does the hammer land square on the head of the nail? These questions indicate some of the things you will have to overcome. The kind of nail used is governed by the kind of wood, and the type of work being done. It is important to have a full knowledge of various types of fastenings, and to learn this do not let a detail of this kind escape your observation.

Framing is a term applied to the cutting, shaping and assembling of material for frame buildings. In this article what is known as the "balloon frame" is considered. This is the type commonly used, because of its simplicity of construction. Timbers are not necessary excepting where posts are used as foundation, and then only for sills to support the construction, as in Figure 1.

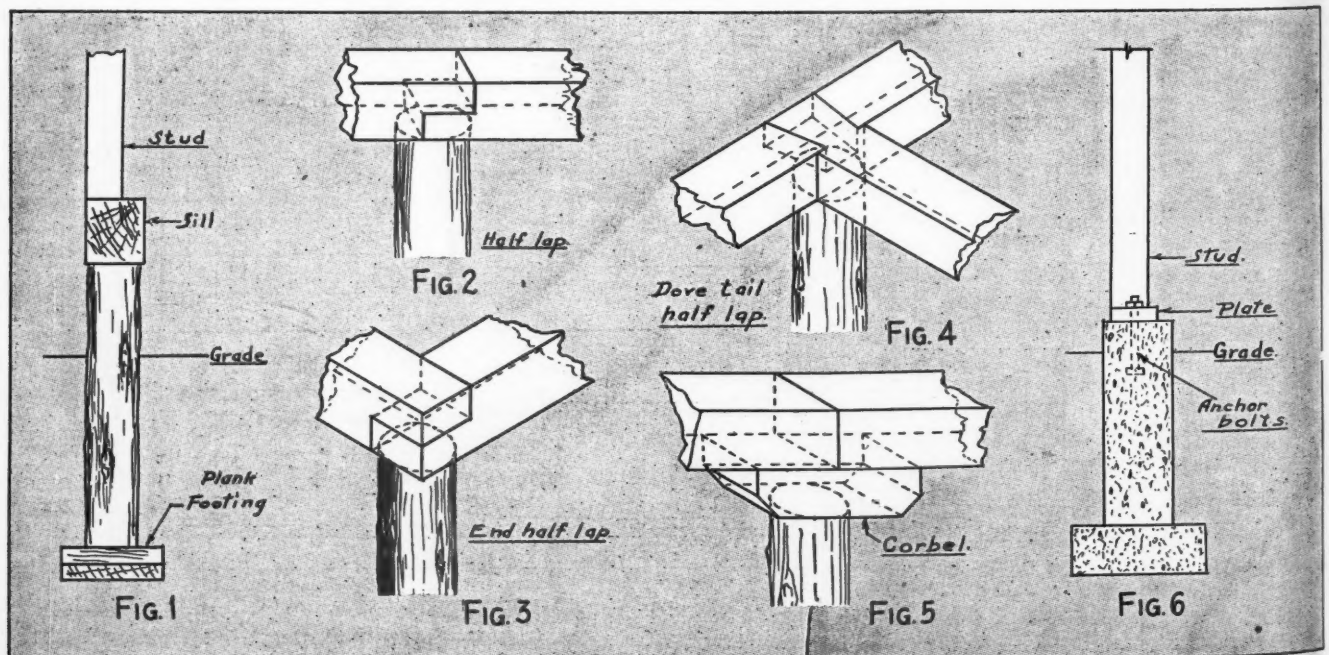
When sills are supported on posts it is common practice to frame the timber all around the building. The half lap joint is the method of joining members, as shown in Figures 2, 3 and 4. When it is used, the posts are set so as to allow the lower end of the joint to have some support on the post. The fastenings used are usually heavy nails such as 40 to 60 penny common (spike); however, in the older buildings you will find heavy oak pins (dowels) were used.

The Butt joint is sometimes used, but requires a corbel, as shown in Figure 5.

Where rubble stone foundations are used, the timber sill is still used, but may be smaller in dimension and must be bedded in mortar and bolted, as in concrete foundations.

Where concrete or block foundations are used a 2x8 is commonly used for sills, bedded in level with mortar, and bolted every two, not more than three, feet apart as in Figure 6.

Labor costs have influenced the construction of even

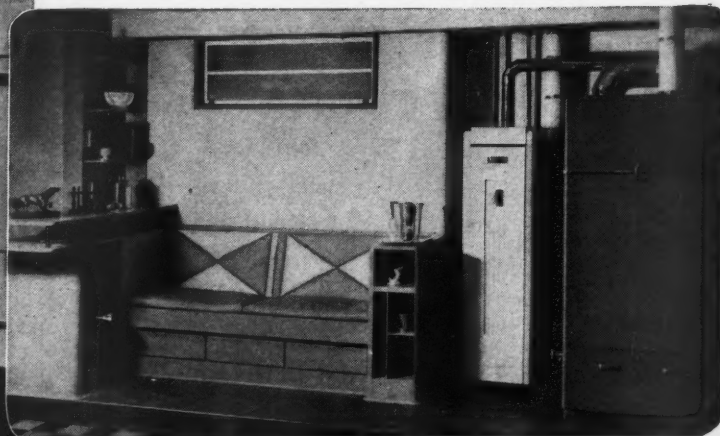


FIGS. 1 to 5: Methods of setting sills on posts and joining timbers. Fig. 6: Anchor bolts are used with foundations.

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the balloon type framing, and where the joists and studs were formerly framed into the sills, as in Figure 7, the practice employed today is shown in Figure 8.

The joists are placed directly on top of the sill, and the stud placed along the side of the joist. The stud and joist are nailed together and both are firmly nailed to the sill. When placing the sill on the foundation, keep back far enough to allow the outside of the sheathing to be even with the outside of the foundation. This is usually about  $\frac{7}{8}$  inch (Figure 9).

The method of supporting joists for the first and second floors is to notch the stud to allow a supporting strip called "ribbon," usually a 1x4 or 1x6, surfaced four sides (s4s) as in Figures 10 and 11. When framing, dimension  $x$  is used rather than the depth of the notch. This lines the upper edges of the joist, so as to obtain an even floor. The notch cut in the joist helps to tie the building together.

For a balloon frame it is desired to have the studs for the outside walls in one length. This is also true for the joists. In order to show the method of erection, let us assume we have a problem as shown in Figure 12.

The basement height 6'8" clear, no plaster; 2x10 the size of the joist for the first floor; 1x6DxM Y.P. for sub-floor; 1x4 No. 1 edge grain Y.P. for finish floor 8'9", full clearance of first floor; plastered ceiling; 2x8 joist for second floor, no sub-floor for second floor but a 1x6 No. 1 Y.P. laid over joist. Top of plates to be 2' above floor. Double 2x4 for rafter plates.

It is not my intention to go into detail with simple mathematics but to show the necessity of knowing the actual size of materials used and the method of formation. Notice that no dimensions are shown through the joist and floor. It is this dimension you will have to account for. The actual size of a 2x4 would be  $1\frac{5}{8}$  x  $3\frac{5}{8}$  as  $\frac{3}{8}$  is lost because of milling to dimension. This applies to the other stock as well. In 2x8 it is actually  $1\frac{5}{8}$  x  $7\frac{5}{8}$ , and in 2x10 you will find it  $1\frac{5}{8}$  x  $9\frac{5}{8}$ . There is also a variation in joist size for other reasons such as seasoning, where one piece may shrink more than another. In a 2x10 it may shrink to as small as  $9\frac{1}{4}$ . Shrinkage and other reasons may cause a variance of joist size perhaps as much as  $\frac{1}{2}$ ".

#### Notched Joists Allow for Width Variations

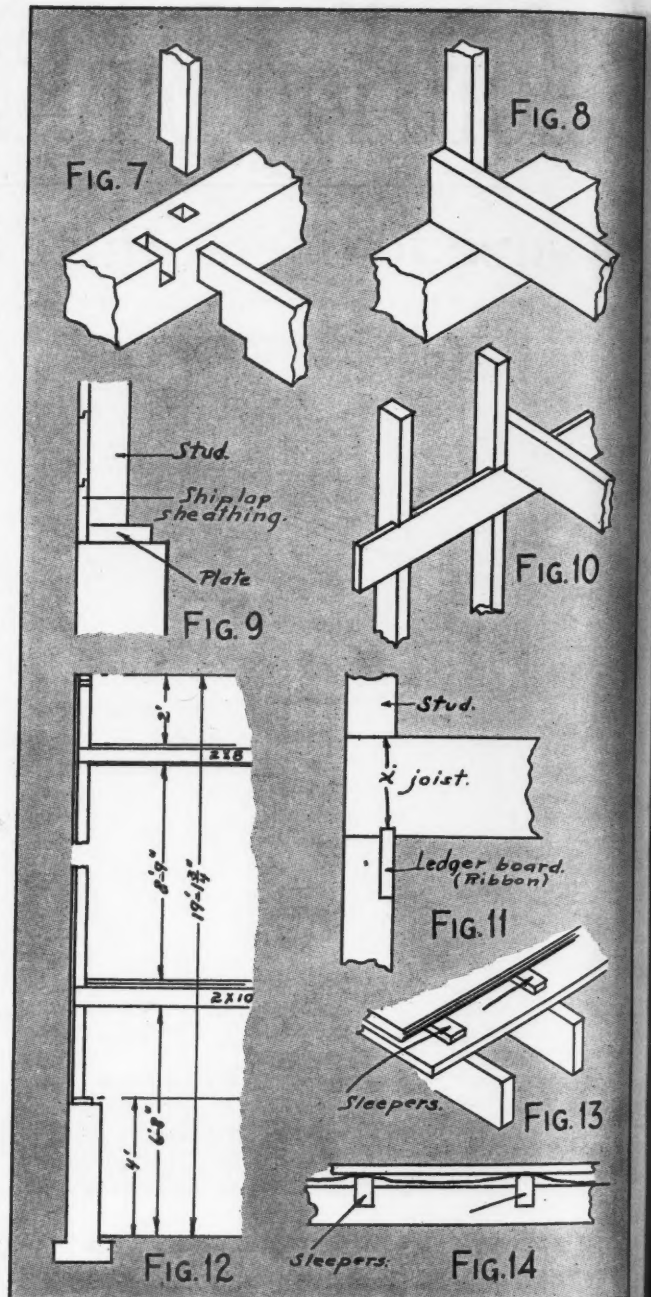
In order to have our joists even at the top edge, a notch is cut as in Figure 11. This notch is very seldom more than  $\frac{5}{8}$ " in depth, thereby allowing 9" of joist timber above the notch in a 2x10, and in a 2x8 joist the distance above the ribbon is 7", etc. This naturally makes the bottom edges of the joists out of line, but when plastered, this is taken up in plaster thickness. I have shown this in order to make proper allowance for it in the layout for the ribbon. The thickness through the first floor is then  $9\frac{5}{8}$ ", for the joist, plus  $\frac{7}{8}$ " for the sub-floor, plus  $\frac{7}{8}$ " for the finish floor, plus any thickness that may be used for sleepers. Figure 13.

Sleepers are strips laid between the sub-floor and the finish floor for deadening purposes.

Strips, even 2x4 bedded into concrete, as in Figure 14, are also called sleepers.

Then in the assumed job (Figure 12) we have  $9\frac{5}{8}$  plus  $\frac{7}{8}$  plus  $\frac{7}{8}$ , or  $11\frac{3}{8}$  from top of finished floor to under side of joist. On the second floor we have  $\frac{7}{8}$ " for finished floor,  $7\frac{5}{8}$ " for the joist,  $\frac{7}{8}$ " for lath and plaster, or a total of  $9\frac{3}{8}$ ". Then the total height from basement floor to the top of the plates is as shown in Figure 12.

Let us again assume we have laid a level from the top of our plate to a rule, that stands vertical and



FIGS. 7 to 14: Details of balloon type framing.

reaches to the floor, and have found this distance to be 4'. Subtracting this, then, from the total height we have  $15'-1\frac{3}{4}"$ .

We still have the thickness of two 2x4's, which is  $3\frac{1}{4}$  to subtract, which gives us the total height of the stud  $14'-10\frac{1}{2}"$ .

Select a straight 2x4-16, square one end, doing this as carefully as possible. Measure the length and cut square. With the above data you can now determine the position of the joist which will enable you to lay out the notches for the ribbons. Cut the notches carefully as you will then use this stud as a pattern, for the balance required.

Make a pattern for the joist also, the length being the distance across the building to the outside of the plates. If a great number of joists are to be cut, it may be smart to use some lighter material for the pattern, but as two men usually do this it is seldom required. When marking the joist be sure the crowned edge is selected for the top edge. The crown of the joist soon disappears as additional weight is placed upon it.

# Service behind the Truck

Capitalize on  
INTERNATIONAL'S  
After-Sale Service



The Johns-Manville Co., uses this 1½ to 2-ton International Model D-35 Truck for its Home Insulation Division at Buffalo, N. Y.

LONG before the automotive era, service to the customer was the keynote that guided the men who founded International Harvester. Their policy has been faithfully adhered to through the years.

Today International Harvester has 237 Company-owned branches located at strategic points in the United States and Canada, fully equipped to give International Truck owners the kind of service they have a right to expect. Factory-trained service men, working to precision standards and using genuine International quality parts, turn out the work in the shortest possible time.

Whether International Trucks roll up mileage on the nation's highways or confine their work to city streets, they are *always close to International factory-standard service. Truck dollars go farther*

*with International*—the investment is protected throughout the life of the truck by this matchless after-sale service. Visit our nearby branch and see International service "working." Talk to International owners and you will know its value.

★ ★ ★

For well over 30 years, International Harvester has been building trucks with not only dependability in mind, but economy of operation as well. Time alone has not built the reputation and preference for International Trucks—*performance per dollar* on the cost sheets has been the answer. There is an International Truck for every hauling need, ranging from the Half-Ton unit to powerful Six-Wheelers. See our nearby Company-owned branch or dealer for complete details.

## INTERNATIONAL HARVESTER COMPANY

(INCORPORATED)

180 North Michigan Avenue

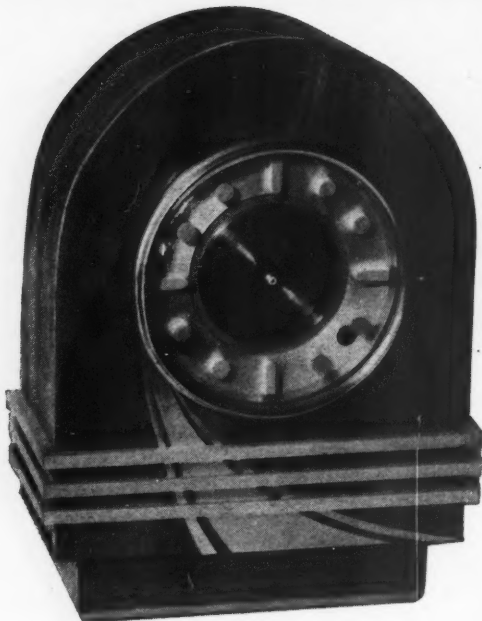
Chicago, Illinois

# INTERNATIONAL TRUCKS



# SHOPCRAFTER'S Corner

## Things To Build for Profit or Pleasure



### MODERN CLOCK

FOR a veneered clock almost any wood will do for the core, provided it is well seasoned and will not crack or warp. Begin construction by gluing the three blocks (marked "1" in Fig. 2) together. Four blocks  $\frac{3}{8}$ " thick may be substituted if  $1\frac{1}{4}$ " stock is not readily available. After the glue is dry, plane the sides to required width, squaring carefully. To this laminated block glue the two sides (marked "2" in Fig. 2). Note that the lower edge of the block is below the center of curvature in order to provide a hole for the pivot used in sawing the curve. After planing the front surface of this assembly, mark the center of curvature, and drill a hole for the pivot. One method of providing a pivot is as follows: A thin wide board, holding a nail vertical (head down) is clamped to the band saw table with the pivot (nail) at distance of radius from the saw. Check that the clamps will not interfere with the work. Now saw out the inner curve ("3" Fig. 2) and save the core to use with the veneering press. Before changing the pivot cut the back for the clock. The front ("4" Fig. 2) is now glued to the side-top assembly. When dry, cut the outer curve ("5" Fig. 2) on the band saw, using a pivot hole through the face at the exact center of the dial position. Cut the hole

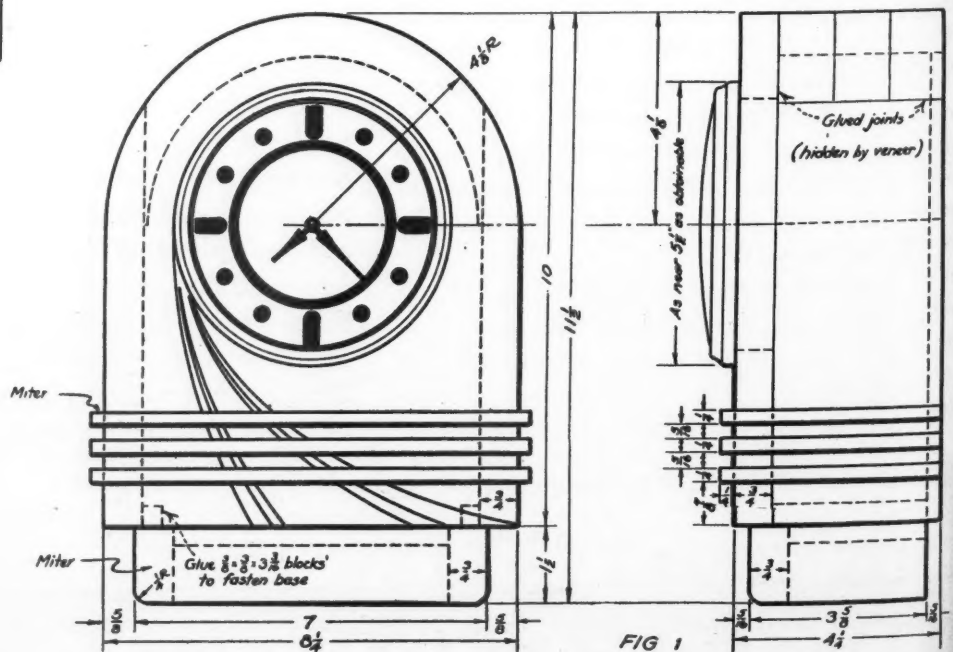
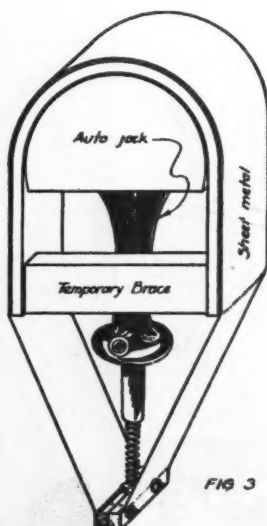
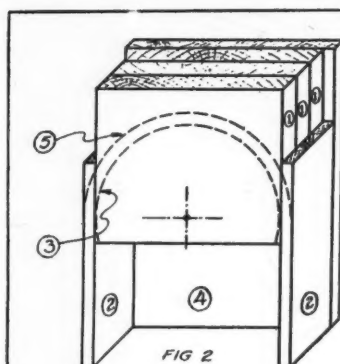
in front to accommodate the dial. The case, after squaring, is ready to veneer.

An improved veneer press for the sides is shown in Fig. 3. A 40" strip of light sheet metal, joined by bolts and wooden blocks to form a loop, is drawn tight by means of an automobile jack. The core, sawed from the inner curve, is used as footing for the jack.

The trim of three bands is cut from maple or birch for light tone, ebony (may be stained) for dark (Fig. 1). The corners of the trim are mitered and the thickness of the metal front design cut away where contact occurs. In case the dial of your works is old fashioned, it can be readily converted into a modern face as shown to harmonize with the curved metal ornament.

### BILL OF MATERIALS

Pcs.	DESCRIPTION	SIZE
1	CASE, Front .....	$\frac{3}{4}$ " x $8\frac{1}{4}$ " x 10"
2	" Sides .....	$\frac{3}{4}$ " x $3\frac{1}{2}$ " x 9"
3	" Top .....	$1\frac{1}{4}$ " x $6\frac{3}{4}$ " x 6"
1	" Back .....	$5\frac{1}{16}$ " x $6\frac{3}{4}$ " x $10\frac{1}{4}$ "
2	" Blocks .....	$\frac{3}{8}$ " x $\frac{3}{8}$ " x $3\frac{1}{16}$ "
3	" Front Trim .....	$\frac{1}{4}$ " x $\frac{1}{4}$ " x $8\frac{3}{4}$ "
6	" Side Trim .....	$\frac{1}{4}$ " x $\frac{1}{4}$ " x $4\frac{1}{2}$ "
1	" Veneer .....	$1\frac{1}{28}$ " x $8\frac{1}{4}$ " x 10"
1	" Veneer .....	$1\frac{1}{28}$ " x 5" x 30"
1	" Metal Ornament .....	$5\frac{1}{2}$ " x $6\frac{3}{4}$ "
1	BASE, Front .....	$\frac{3}{4}$ " x $11\frac{1}{2}$ " x 7"
2	" Sides .....	$\frac{3}{4}$ " x $11\frac{1}{2}$ " x $3\frac{5}{8}$ "
1	" Floor .....	$5\frac{1}{16}$ " x $2\frac{7}{8}$ " x $5\frac{1}{2}$ "
1	" Veneer .....	$1\frac{1}{28}$ " x $11\frac{1}{2}$ " x 10"



THIS DESIGN with directions was reproduced from more complete details and instructions furnished by Casein Co. of America, Inc., 350 Madison Ave., New York City. It is one of the 24 plans offered to Casco users in the Casein Free Project service.

# Not too hot Not too cold But Just Right



Every G-E System is installed under the supervision of G-E trained engineers. Engineers who specialize in the "big" little things that go to make up the "just right" kind of Air Conditioning.

Cooling . . . cleaning . . . circulation . . . dehumidification . . . and ventilation are blended into a harmonious whole to provide ideal conditions throughout every corner of the home or building.

General Electric Air Conditioning Systems use a minimum of power and water. Thus, your client has the finest equipment that money can

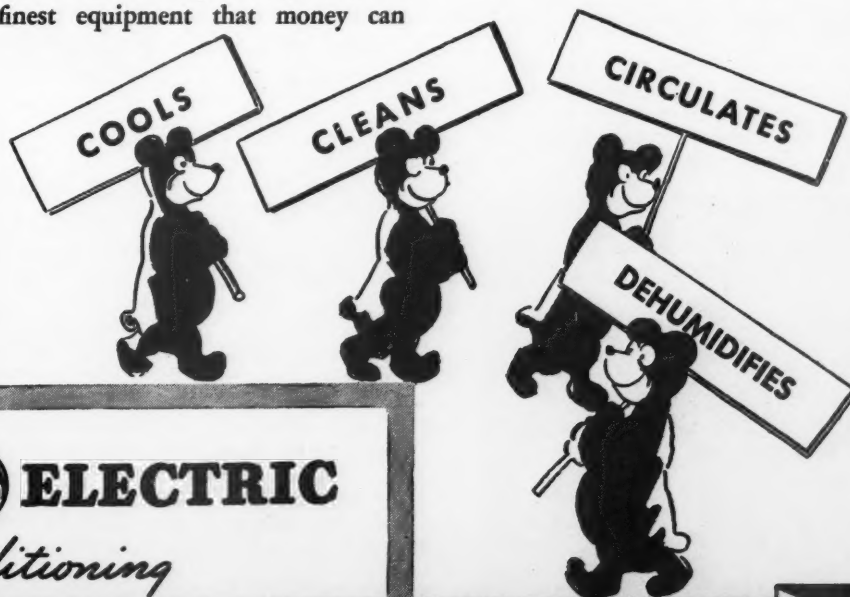
buy, operating at the lowest of costs!

Let us tell you the whole story of General Electric Air Conditioning. How from a broad line of factory built equipment — for economy — each and every installation is custom-tailored—for efficiency—to fit your needs. Let us show how we have helped other leading architects —and how we can help you with every Air Conditioning problem.

Write TODAY for complete information. Address General Electric, Air Conditioning Department, Division 1711, Bloomfield, New Jersey.

When your client asks for a *comfortably* Air Conditioned atmosphere in his home or building, you may be sure he wants General Electric Air Conditioning! For G-E Air Conditioning *is* the comfortable kind—not too hot—not too cold—but *just right!*

And you will find that true satisfaction comes when you specify General Electric. Not simply because a G-E System provides better Air Conditioning! Not because a G-E System costs less to own and operate! More important to you—*because all G-E Air Conditioning Equipment is designed, built and backed by General Electric!*



**GENERAL  ELECTRIC**

*Air Conditioning*

**There IS a difference in Air Conditioning!**



# Building Products Continue to Be Improved

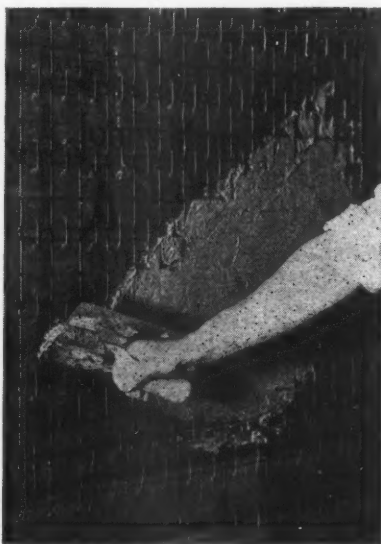
## Constant Adding of New Ideas to Many Basic Materials and Equipment Assures Building Progress

### Reinforced Plaster Base

JOHNS-MANVILLE Corporation has added to its line a new plaster base known as Steeltex for Plaster—Type A. An important innovation is that the welded truss principle of securing rigidity is introduced in a plaster base for the first time. This not only tends towards a greater rigidity, but it introduces 26.6 per cent more effective steel reinforcing to the plaster slab than the original Steeltex. The reinforcing mesh in the new Steeltex is entirely embedded in the plaster, for the mesh is entirely on one side of the lath, and this assures new elements of strength and prevents corrosion since none of the reinforcing wire is exposed.

The new Steeltex consists of 16 gauge, galvanized, copper-bearing steel wires welded into a 2-inch square mesh and securely attached to a specially designed fibrous paper backing. It is supplied in rigid sheets (30½" x 49") packed in a fibre board carton.

The added rigidity of Type A Steeltex assures less deflection under the pressure of the plasterer's trowel and consequently lessens the amount of plaster necessary for a first class job. This feature together with the instant bonding action of the fibrous backing and the absence of plaster keys introduces factors of improved workability and economy in the use of plastering materials.



IMPROVED Plaster Base

### New Type Balsam-Wool

LOWER application costs and increasing efficiency are the two outstanding advantages of the new improved Balsam-Wool sealed insulation being made by the Wood Conversion Company, St. Paul, Minn. Those advantages are made possible by a new spacer flange along the edges of the insulating mat and a new fibre cleat used to seal the cut edges of Balsam-Wool.



The spacer flange is a refinement in design of the flange which holds Balsam-Wool securely in place. This new flange is scored to fit over the face of the stud, joist, or rafter. It is fastened to the face with a staple hammer.

The fibre cleat seals the cut ends of Balsam-Wool at top and bottom edges and in other instances, where it has

NEW Balsam Wool.

been necessary to trim the mat lengthwise for narrow openings. Lath is no longer required. The new spacer flange and fibre cleat reduce application costs more than 50 per cent—make application easier, faster, and more secure.

Because the flange controls the position of the Balsam-Wool in construction, important air spaces are assured front and back. The flange, fitting over the face of the stud, assures a tight joint as lath is placed directly over it. As the flange does not completely cover the stud, a guide line is left for lathers. The Balsam-Wool mat is sealed in the asphalt coated moisture barrier both front and back.

### Research Produces Better Masonry Cement

IN the new Marquette Masonry Cement announced by Marquette Cement Manufacturing Company, Chicago, those qualities necessary for better work are built in (chemically combined) during the manufacturing process. This was to be sure that every necessary element would be uniform and constant in every bag, batch and carload.

From research covering the experiences of architects, contractors and bricklayers, the present day requirements for a good masonry cement were found to be that it should not be harsh, gritty, nor stick to the trowel, but should spread slick and smooth, laying more brick, stopping waste of material and time and cutting costs. It should make a perfect bond by eliminating shrinkage and air pockets in the mortar, making water-tight joints and giving a job that doesn't need pointing up later. One should be able to wheel or carry it a reasonable distance from the mixer without floating water to the top, making it necessary to retemper before use. It should set in a reasonable time and joints strike clean to permit striking before scaffolds are moved and save cleaning costs when the job is finished. Marquette's new cement is especially made to cover these requirements.



MASONRY cement engineered to do a quality job.

### New Weatherproof Plywood Siding

THE perfection of a new type of weatherproof plywood siding called "Harborside" has been made by the Harbor Plywood Corporation, Hoquiam, Wash., the nation's largest manufacturer of plywood.

The new siding is made from an exclusive weatherproof plywood known as "Super Harbord" which is hot pressed by an original method with a cresol-formaldehyde synthetic resin binder, which is insoluble in water. Harborside is being manufactured with both redwood and fir facing, in four- and eight-foot lengths, and with exposures of 12½, 15, 18 and 23 inches.

The large units can be applied rapidly. One of the distinct features of Harborside is that it provides a real barrier to moisture. This is provided by the patented binder which absolutely prevents the passage of moisture from exterior to interior, and vice versa. This is of particular importance in painting, as painters can immediately follow carpenters, and ordinary paint disintegration due to under-surface moisture is completely eliminated. Less frequent painting plus the prevention of paint blisters

(Continued to page 84)

# Profit from the New N.H.A. PLAN

with **Carey**

## MONEY MAKING BUILDING SPECIALTIES

### CAREYSTONE SIDING AND SHINGLES



Made of asbestos and cement. Careystone is fireproof, rot-proof and wear-proof. Never needs painting or other upkeep. Now available in the new Thatch Butt and Wave Line units, in random widths, duplicating the most costly construction.

### CAREY CORK-INSULATED SHINGLES



THE Shingle with outside mineral surface for weather protection; cork underside for insulation. Provides roof and roof insulation for roof cost. Makes the home warmer in winter, cooler in summer; saves fuel. A boon to the builder who desires to put extra value into his homes without extra cost.

### CAREY ROCKTEX HOME INSULATION



Provides maximum control of room temperatures the year 'round. Will not shrink, bulge, rot or burn. Vermin and termite proof. Effects fuel savings that normally return its cost in a few years. Produced in Bat, Wool and Granulated form, to meet all installation conditions in old or new homes.

The new NHA legislation means extensive and immediate new home building and modernization throughout the nation. It means new **VOLUME** of business for building material Dealers.

Volume alone, however, doesn't insure profits—it may result in loss for some Dealers. But **volume**—plus the attractive margin provided through sales of Carey Specialties—puts you on a sure and substantial profit basis.

The Carey franchise reserves to Carey Dealers the sale of distinctive products that are in popular demand because of the new advantages they provide the public—for the *extra* service and better performance they render.

Capitalize with Carey Specialties, the new business opportunities afforded by N. H. A.

### BACKED BY AN ORIGINAL NATIONAL ADVERTISING PLAN

Carey National Advertising is featuring a most helpful and practical service to home builders, and is developing a vast number of prospects—live leads for Carey Dealers. Write today for details telling how you may capitalize on this advertising in your locality.

**THE PHILIP CAREY COMPANY • Lockland, Cincinnati, Ohio**

*Dependable Products Since 1873*

BRANCHES IN PRINCIPAL CITIES



## New Weatherproof Siding

(Continued from page 82)

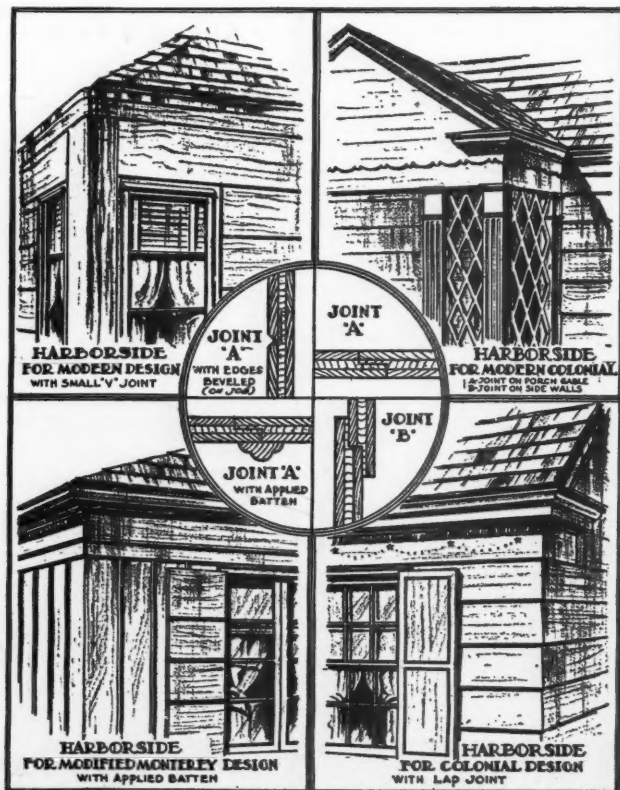
caused by internal moisture is definitely assured by the use of Harborside.

Harborside lends itself admirably to remodeling, as well as new construction, and many interesting treatments are permissible. Double-rabbeted lap-joints prevent the passage of moisture, and Harborside can be laid with an absolutely smooth surface or overlapping with many different effects available through the application of special "Harmoulds" of the same material, as well as the conventional type of moulds.

The binder by which the plies are fused is toxic to termites, all insects and rodents. The cross-banded construction of Harborside prohibits shrinkage, swelling or splitting.



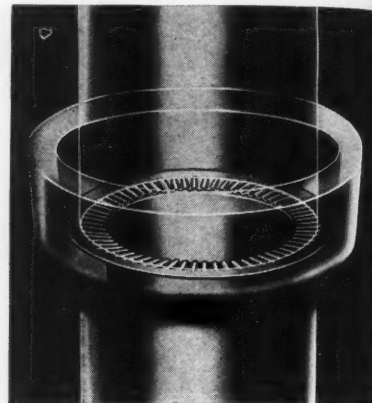
HARBORSIDE in course of application, with inset showing dimensions of side and end rabbeting.



FOUR DIFFERENT architectural effects by use of Harborside are illustrated above. Treatment of joints is indicated in center detail.

## New Rings Keep Roots from Sewers

WITH Stop-Root rings, developed by the A-B-C Manufacturing Co., Quincy, Ill., low cost clay or concrete pipe sewer can easily and cheaply be made absolutely root-proof. Penetration of roots into clay or concrete pipe sewers has long presented a major problem in sewer construction. When Stop-Root rings of copper are placed directly in the path of incoming roots, they provide, by corrosion, a positive and permanent supply of poisonous copper salts through which no root can ever penetrate.



NEW Stop-Root Rings

## "No-Odor" Oil Wall Paint

A COMPLETE new line of Valdura oil wall paints has been announced by the American Asphalt Paint Company, Chicago. It combines two developments which paint chemists, oil processors, and pigment manufacturers have been trying to perfect for several years. The first development is the entire removal of all paint odors. They are completely removed by a newly discovered process—not merely concealed with perfumes or "neutralizers."

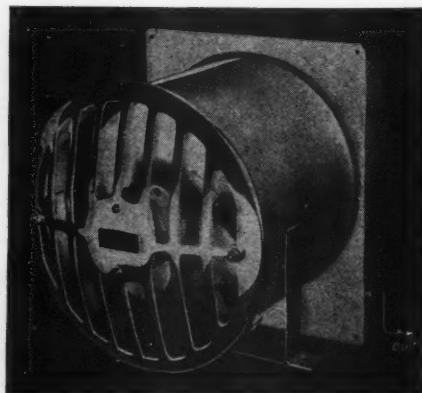
Second, this new paint has a "thixotropic" body. This means, simply, that although it appears thick and "semi-buttery" in the can, a little active stirring quickly thins it to easy-flowing brushing consistency. This heavy, elastic body enables it to hold more pigment in constant suspension and gives the extra hiding power that means more one-coat jobs. It is supplied in flat, egg shell and gloss finishes, in popular colors.



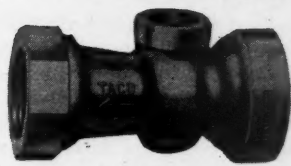
NO-ODOR oil wall paint

## Improved Kitchen Ventilating Fan

THE "Kitch-N-Ventor," announced by the Universal Blower Company, Birmingham, Mich., has the ability to ventilate against an outside, opposing wind of any intensity through use of a housed, automatic damper. All springs, levers and pull chains are eliminated. It operates from wall switch and is sleet and leakproof. The quiet-type 10-inch fan is all aluminum, capacity 750 C.F.M. Wall thimble is adjustable for all wall thicknesses. Grille of polished aluminum. Motor for 110 volts, 60 cycles.



KITCHEN ventilating fan operates even against strong opposing wind.



*Hank*

**Sez—**

It's hard to believe that this fitting does a pumping job fur each radiator. But even if you don't believe it, don't make no difference. It does it just the same.

## There Ain't No Sense In Using **2** Pipes On Hot Water Heating

**BY** HECK, it's just plumb foolish to pay out money fur two pipes, when you can save money by using one. But the saving there is, ain't all there's to it by a jug-full. You get better heating by a-doing it. That is to say, you do, if you do it the Burnham way.

And now you are asking me, how it's done that way, which is exactly what I was fishing fur you to be asking.

You do it by using the Burnham-Taco Venturi Fitting. *One* to each radiator. And I didn't say *two*. Just *one*.

Besides which, you use the Burnham Pusher Pump, which gives a shove to the circulation that ain't maybe.

But 'tain't so important right now how it's done with one pipe, as that it can be done, and be saving you money. So better had you be using some of that smart thinking of yourn and send to us at once fur the full facts. And don't put off a-doing it till tomorrow or maybe next week. *Now* is the only time you got *at hand*. Maybe there won't be no next week or sumptin'.

*Hank Hindle*

### BURNHAM BOILER CORPORATION

Manufacturers of Heating Equipment Since 1873  
Irvington, New York Zanesville, Ohio  
Export Department,  
116 Broad Street, New York

*Burnham Boiler*

# "WASP"



**A Brand New  
CARTER  
ELECTRIC  
PLANE  
\$49.50**



## A MONEY-MAKER FOR EVERY BUILDER --- LARGE OR SMALL

Opens a whole new field of easier work at lower cost. Think of the hundreds of places on any building job where you can save with this hand plane — fitting doors, windows, transoms, screens, shutters, drawers . . . weatherstripping, tongue and groove work . . . rounding over, chamfering, and moulding cuts. Weighing but 8¼ lbs., the Carter "Wasp" planes stock up to 1½" wide. Running at 18,000 R.P.M., the spiral cutter planes ends of doors and stiles with no splintering. Adjustable front shoe sets depth; makes all cuts square and true. Sturdily built for continuous operation. Compact—no gadgets to get out of order—just plug it in and go to work. R. L. Carter Division, The Stanley Works, New Britain, Conn.

**SAVE MONEY! PASTE COUPON ON 1¢ CARD or  
WRITE TODAY!**

R. L. CARTER DIVISION  
The Stanley Works  
New Britain, Conn.

Gentlemen:

Please send me descriptive folder on your New Electric "Wasp" Plane.

Name.....

Address.....

**CARTER MONEY MAKING TOOLS**



# IT LASTS AS WELL AS IT LOOKS



● Anything looks well when it's new, plumbing fixtures included. But that's not all that counts. What you and your customers want to know before you put money and work into a job—a bathroom or a kitchen—is what it's going to look like five years from now.

● And that's just where Formed Metal Plumbing Ware comes in. Time will not dim the luster of porcelain enamel on an Armco Ingot Iron base. In ten years (with ordinary care), they'll be as clean and smooth as they are today. In short, Formed Metal Plumbing Ware is an investment in beauty for both the home-owner and the builder.

● On every piece of Formed Metal Plumbing Ware is the Armco triangle. This familiar trade-mark signifies that the base metal is Armco Ingot Iron, accepted by the public and by builders everywhere as the standard of enameling iron quality.

● Specify Formed Metal Plumbing Ware on your next job. If your plumber cannot show it to you, write us for complete information. The American Rolling Mill Company; Executive Offices, 721 Curtis Street, Middletown, Ohio.

**ARMCO** INgot  
IRON  
A NAME KNOWN TO MILLIONS



## NEW PRODUCTS—Continued

### Low Cost Switches for Small Homes

FOUR new switches have been designed for today's small home market by the Bryant Electric Company, Bridgeport, Conn. An interchangeable feature permits assembly of these low cost switches with other units of the interchangeable line to provide a compact low cost installation.

Features include completely enclosed Bakelite body, self-aligning bronze contacts, arc snuffing barrier, Bakelite handle, positive kick-off, and full 10 ampere rating.

LOW COST electric switches.

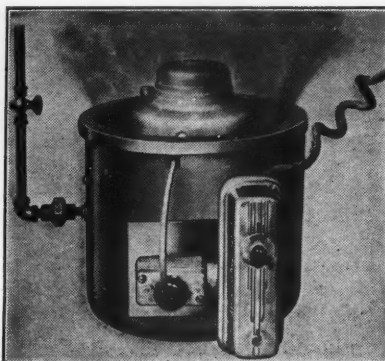


### New Automatic Humidifier

A SMALL humidifying unit, with a capacity of 1½ pints per hour, which has many adaptations in the building and construction fields, is being manufactured by the Cugley Incubator Company, Elkhart, Ind. The introduction of one or more units will serve as an air conditioner and meet any desired humidity specification, and because it can be tapped into the regular water supply or storage tank, it eliminates the necessity of installing special equipment to handle water.

Mounted inside the spun-copper bowl, which forms the housing of this unit, is a waterproof motor.

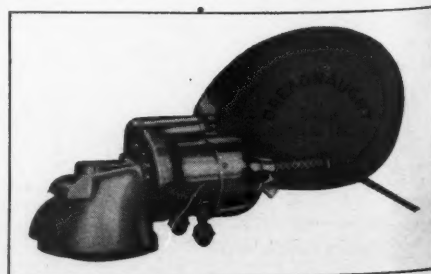
It drives a mechanism to break water in the bowl into finely divided mist and mixes it for delivery with sufficient air to complete vaporization. The vapor rises from the top of the bowl. This bowl measures 13½ inches in diameter, 11½ inches high, and the complete unit weighs but 35 pounds.



AUTOMATIC humidifier helps condition the air.

### Dustless Sanding Edger

THE new Dreadnaught dustless edger made by the Clarke Sanding Machine Company, Muskegon, Mich., is being offered to those engaged in floor sanding work. Horizontal construction makes it possible for the operator to do a more complete job of finishing the edges, and easily reach under sinks, registers, etc., The dynamically balanced disc is 7" in diameter and develops a speed of 3400 R.P.M. under load. This high speed makes it possible for the machine to easily remove old varnish or paint from floors and produce flawless work. The motor in the machine is handwound Universal type; machine housing is made of high grade aluminum polished to give it a fine appearance as well as to be representative of its substantial construction. A pilot light on the front end of the machine guides the operator in dark corners. Trigger switch is conveniently located below the rear handle. The machine is entirely dustless.



NEW dustless disc type edger for floor sanding work.



**TAKE THE  
SHORT CUT  
TO SAWING PROFITS WITH  
SKILSAW!**

Because it's 10 times faster . . . because it can do any kind of sawing job . . . because you can take it wherever you need it—SKILSAW will cut your sawing costs in half, increase your profits, turn more bids into actual jobs! It will make you more money on the first job . . . and all your jobs for years to come!

For 18 years, since we introduced the first portable electric handsaw, SKILSAW has been the choice of progressive builders everywhere. It has more power . . . more construction refinements . . . more sawing applications. Works from any light socket. Cuts wood, metal, stone, compositions. 9 Powerful Sizes.

Sold by leading distributors of mine, mill, hardware and contractors' supplies

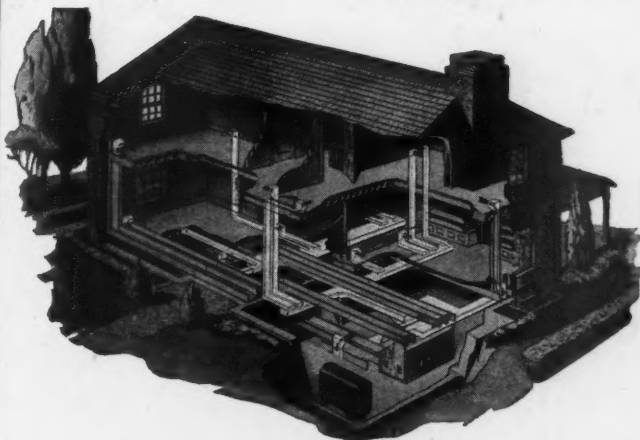
SKILSAW, INC., Dept. A, 3314 Elston Ave., Chicago  
214 E. 40th St., New York • 52 Brookline Ave., Boston  
1429 Spring Garden, Philadelphia • 1253 S. Flower St., Los Angeles • 2065 Webster St., Oakland



Makes compound mitre-bevel cut on thirty 2x12 in. hip-pitch rafters in only 10 minutes!



**MR. BUILDER: what will you use for that new heating system?**



**Gar Wood**

**TEMPERED-AIRE**  
AIR CONDITIONING, OF COURSE

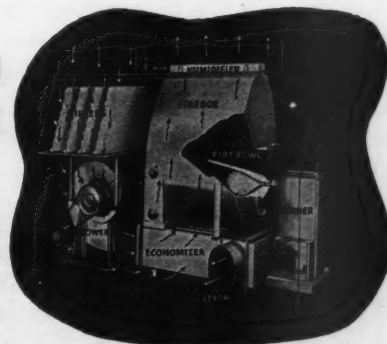
★ There are at least two distinct advantages in choosing Tempered-Aire—it is a distinct sales feature while you are selling, and a guardian of your reputation after the sale is made.

Tempered-Aire makes your home truly modern—every room more healthful and more luxuriously comfortable. Tempered-Aire heats, humidifies, circulates and filters the air of all rooms—quietly, efficiently and without drafts. Its pre-fabricated duct system—Gar Wood "Air-Dux"—is built to standard building measurements and installs in one stage, uniting with the Tempered-Aire cabinet without need for tailor made trunk lines. Satisfaction is certain—there is no guesswork.

**PIONEER THEN  
... the LEADER  
NOW**

When air conditioning for homes was just starting, Tempered-Aire was a pioneer unit. Today it is the

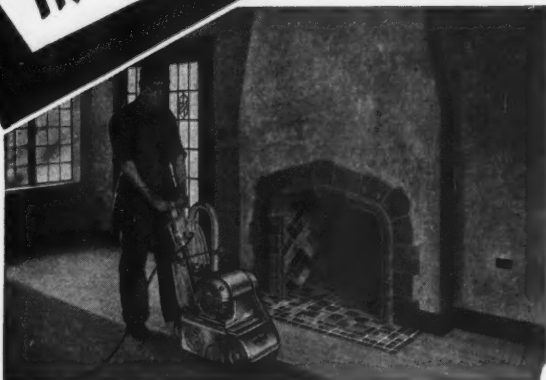
sales leader. It will pay you to install this tried and tested winter air conditioning equipment in the homes you are building. Let us send details.



AIR CONDITIONING DIVISION  
**GAR WOOD INDUSTRIES, INC.**  
7926 RIOPELLE STREET DETROIT, MICHIGAN  
Canadian Distributors: Engineering Industries, Ltd., Leaside, Ont.



CARPENTERS-CONTRACTORS  
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**BIG MONEY**  
IN FLOOR SURFACING



### BIG PROFITS

Here's your chance to make some big money—be your own boss and get into something for yourself. There is no reason why you should not be a big success in the floor surfacing business—you already know a lot about the building game, so you naturally have a head start on the other fellow.

### EASY TO RUN

An American Floor Sander is easy to run—truly a professional machine. No skill is required to operate and within a few hours you can run one as well as an "old timer." American floor sanders are easy to take from job to job. You don't need any helpers.

### SEND COUPON

Sign and mail coupon below and get complete details and prices without cost or obligation. It costs you nothing to investigate. If you are in a rut, now is the time to get out and become independent—have your own American floor surfacing business. Wide selection available in from small six-inch drum sanders to largest twelve-inch, in a complete price range.

## THE AMERICAN

FLOOR SURFACING MACHINE COMPANY

511 So. St. Clair Street • Toledo, Ohio

#### Gentlemen:

- ☐ Send complete details and prices on your American floor sanders without any cost or obligation to me whatsoever.  
☐ I am a contractor and want machine for my own use.  
☐ I am thinking of getting into business for myself.  
☐ I already own one—quote trade-in value.

Name .....

Street .....

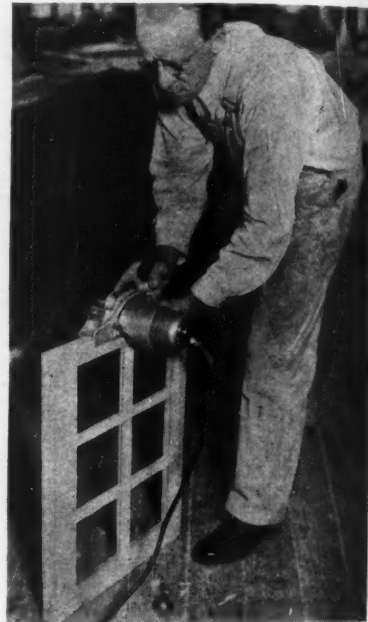
City..... State.....

### New Portable Electric Plane

THE R. L. CARTER Division, New Britain, Conn., manufacturers of portable electric woodworking tools, has announced the new "Wasp" plane for contractors and cabinet makers. Used with the patented Carter spiral cutter, the "Wasp" is designed for planing edges and fitting doors, window frames, storm windows, screen doors, screens, transoms, and other trim. It will do these jobs rapidly, leaving a smooth even surface that does not show wave marks. There are over fifty different Carter shaper cutters available for use singly or in combination with the "Wasp" to make tongue and groove joints, rabbets, surface bead cuts and other moulding cuts (according to cutters used) for drawers, kitchen cabinet doors, etc., in the shop or on the job. It can also be used to fit the sash and with a grooving cutter to make the plow cut for the weatherstrip.

Length of the plane is 10¾ inches. A movable front shoe can be adjusted quickly for different depth of cuts. Powered with a ¾ HP high speed 18,000 R.P.M. Carter shaper motor, the "Wasp" plane can be operated from any ordinary electric light socket.

WORKMAN using new electric plane.



### Redesigned and Improved Band Saws

THE 20" and 30" Monarch band saws, made by The American Saw Mill Machinery Company, of Hackettstown, N.J., have been redesigned, with improved devices and new features added. The frames of both saws are solid one-piece, heavy ribbed, cored castings. The table quadrants are fully machined and can be quickly set with extreme accuracy. The machines can be furnished either as direct motor driven, or belt drive. Both machines are equipped with accurate saw aligning adjustment, and unique saw blade tensioning device. The scale on the saw tensioning device is graduated to read directly the proper tension for the width of blade being used. Thus, if a ½" wide blade is in use, the proper tension for this blade is obtained by setting the pointer at ½ on the scale. The foot brake is standard on the 30" machine and optional on the 20" machine.

The disk type aluminum wheels are also available on both machines. A novel feature of the disk wheels is that they are demountable at the hub instead of the rim. This feature facilitates the renewal of rubber bands and eliminates any possibility of misalignment.

IMPROVED band saw.

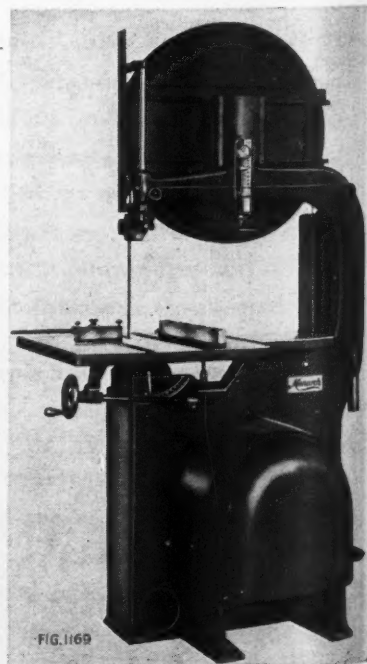


FIG. 1169

## ● ESTIMATING FORMS ●

### The Old Builder's Estimator

Complete estimating forms for one residential job, with a 300 item check list, 7 pages of estimating data, and memo sheets for use on the job. Facilitates the preparation of a complete, itemized, accurate estimate. Three columns are provided for checking every line of the detailed estimate and the forms follow the order in which a residential job progresses.

48 pages, 4 x 7½, paper.....\$1.25  
12 for.....\$2.50

### Contractor's Estimating Records

A complete estimating record for a single job. A 2-page ruled estimating form is followed by a check list for a frame, brick or stone dwelling or apartment house. There are 2 pages for material lists and 2 for millwork lists, with detachable duplicate sheets. On the backs of listing pages are tables and short cut rules for estimating materials.

24 pages, 8½ x 11, paper.....\$3.00  
12 for.....\$3.00

### "Practical" Carpenter's Guide

Contains 11 pages of estimating tables and 54 pages of estimating sheets for figuring any kind of a carpentry job. Forty divisions of work are listed. Space is allowed for writing in the amount opposite each trade.

64 pages, 4 x 7, paper.....\$1.25

### "Practical" Estimate Sheets, Form 514

An excellent sheet for listing all classes of work from the plans. Provides ample space for a full and accurate description of all work estimated, dimensions, quantities, unit and total material and labor costs. Lithographed in green ink on white bond paper.

100-sheet tablet, 8½ x 11 inches.....\$1.75

### "Practical" Summary of Estimate Sheets, Form 515

The front of this sheet contains a complete list of the different classes of work encountered in residential construction, while on the back is a detailed list of practically every operation encountered in the different branches of work. This sheet prevents overlooking an item when making up an estimate. These sheets are particularly convenient when requesting building loans from mortgage houses.

50-sheet tablet, 8½ x 11 inches.....\$1.75

### Quantity Survey and Cost Sheets for Residence Work, Schedule "A"

Three sheets are required to list all the materials that may be required in the construction of a residence and garage. Spaces are provided for describing the materials and telling where they are to be used. Other columns are for price quotations on all items required. Provides for 25 jobs with duplicate sheets, or 50 jobs without.

150 sheets, 12 x 18, cardboard, spiral binding.....\$3.00

### Schedule "B"

Requires one page to list materials required for the construction of a barn or other farm building. Sufficient sheets for figuring 50 jobs with duplicates or 100 jobs without duplicates.

100 sheets.....\$2.50

### Today's Building Estimator

Contains 12 sets of blank forms for taking off quantities so that a complete bill of materials can be made up. The book also contains handy estimating tables.

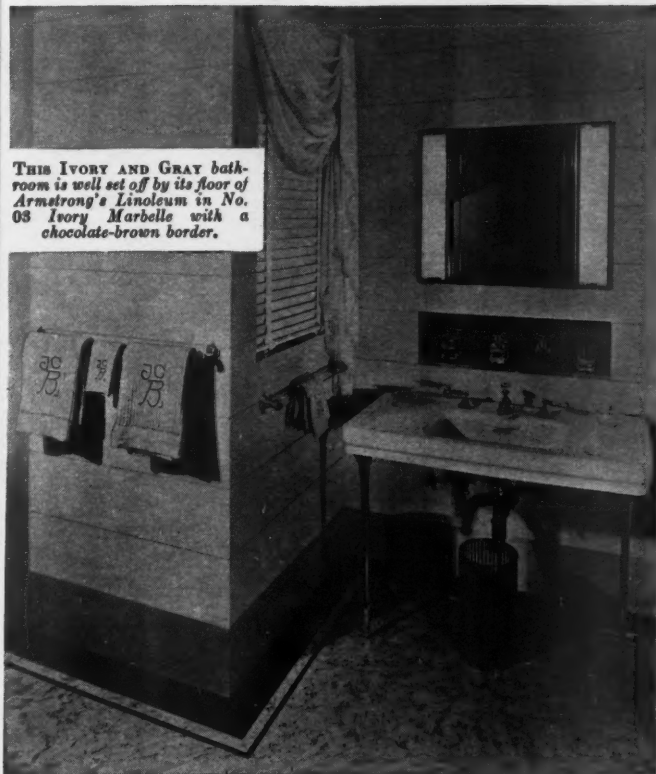
96 pages, 5½ x 8½, cloth.....\$1.25

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30 Church St., New York, N. Y.

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THIS IVORY AND GRAY bathroom is well set off by its floor of Armstrong's Linoleum in No. 05 Ivory Marbelle with a chocolate-brown border.

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ONE way to get the name on the dotted line is to use products your prospects know are the best of their kind. For instance, your prospects know that nationally advertised Armstrong's Linoleum stands for top quality in linoleum floors. Cash in on this good will by offering kitchens and baths floored with Armstrong's Linoleum.

More than two hundred eye-catching designs and colorings—in five thicknesses—provide a floor for every purpose and every pocketbook.

Armstrong's Linoleum is inexpensive to install. And for rented properties, another talking point is the fact that it is so easy to clean during long years of wear. Write now for free book of sales-building linoleum floor designs. Armstrong Cork Products Company, Building Materials Division, 1215 State Street, Lancaster, Pa.



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and RESILIENT TILE FLOORS  
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Every architect and builder should read this interesting new catalog carefully. It proves conclusively why every home should be equipped for thorough ventilation with Victor In-Built Ventilators. From it, you will learn all about Victor's exclusive performance features—about Victor's three outstanding models—the De Luxe, the Standard and the Master. You'll see how these ventilators have been designed for years of trouble-free performance and for easy installation in walls of any thickness or material.

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Kindly state whether you are Architect, Builder,  
Electrical Contractor, etc. \_\_\_\_\_

## News of the Month

### Building Activities and Meetings

### Residential Construction Volume Continues Trend of Last Two Months

CONTRACTS for public projects awarded during January, 1938, were 5 per cent greater than December, 1937, and almost 8 per cent above the January, 1937, total, according to F. W. Dodge Corporation. Public construction for the current month amounted to \$120,842,000, and for the third month in succession, the volume of public construction exceeded the total for the preceding month.

Total construction contracts for both public and private work awarded during January in the 37 eastern states amounted to \$195,472,000. This compares with \$209,452,000 for December and \$242,719,000 for January of last year.

By classes of construction, the January contract total amounted to \$36,207,000 for residential building, \$57,448,000 for non-residential building, \$53,366,000 for public works, and \$48,451,000 for public utilities.

In addition to the increase in public construction, the volume of contemplated new work, particularly in the residential group, has shown continued improvement during the past two months. For January, total contemplated construction for all classes amounted to \$474,205,000 as compared with \$359,365,000 for the preceding month and \$412,680,700 for January of last year.

The figures for the first half of February are as follows:

37 Eastern States	Feb. 1-15, '38	Feb. 1-15, '37	Feb. 1937
Residential .....	\$21,131,000	\$ 33,092,000	\$ 63,003,000
Non-Residential .....	26,167,000	33,255,000	65,186,000
Public Works .....	15,848,000	17,868,000	28,823,000
Utilities .....	2,924,000	16,978,000	31,245,000
TOTAL .....	\$66,070,000	\$101,193,000	\$188,257,000

### Recommended Practice for Use of Pressure Treated Lumber in Buildings

AT THE 34th annual meeting of the American Wood-Preservers' Association held in Chicago in January, a specification covering recommended practice for the use of pressure treated lumber in protecting buildings against decay and termites was approved as follows:

For protection against decay and termites, lumber shall be treated under pressure in accordance with the specifications of the American Wood-Preservers' Association according to use and location as follows:

1. When in contact with ground—Foundation timbers, mud sills, plates, supporting posts, pillars, footing and all other structural members in contact with the ground shall be pressure treated with coal-tar creosote, with a net retention of 8 lbs. per cu. ft.
2. When not in contact with but within 18 in. of the ground between first floor on foundations—Joists, bridging, sleepers, headers, sills, plates and all other structural members not in contact with but within 18 in. of the ground and below the first floor when embedded in or laid on concrete, masonry or timber foundation shall be pressure treated with coal-tar creosote, with a net retention of 8 lbs. per cu. ft.; or with zinc chloride, with a net retention of  $\frac{3}{4}$  lb. per cu. ft.
3. When not in contact with but within 18 in. of the ground below first floor, other conditions—First subfloor nailing strips, siding and sheathing within 18 in. of the ground, stairs, partitions, door and window frames and casings, studding, lath and coal bins in basements and cellars, studs, porch flooring, rails, posts and steps shall be pressure treated with zinc chloride, with a net retention of  $\frac{3}{4}$  lb. per cu. ft.
4. Nailing strips—All nailing strips embedded in concrete or masonry shall be pressure treated with coal-tar creosote, with a net retention of 6 lbs. per cu. ft., or with zinc chloride, with a net retention of  $\frac{3}{4}$  lb. per cu. ft. Lumber treated with zinc chloride shall be air seasoned or equivalently kiln-dried after treatment and before installation, to a moisture content approximating conditions of use.

(Continued to page 94)

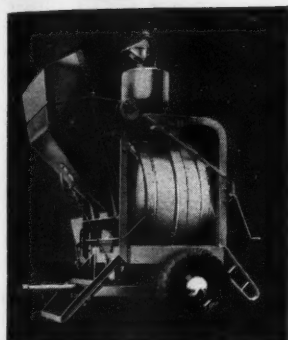
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# CHECK the Mixer that FITS YOUR JOB!

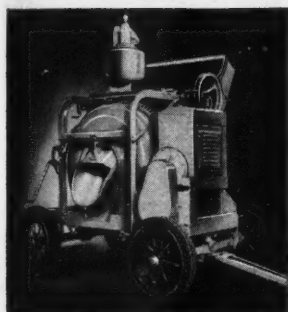
# 3

**Faster, Time-saving  
Models that Turn Out  
MORE CONCRETE PER DAY**



## ☐ Speedy Two-Wheel TRAIL-SMITH in 7-S and 10-S Sizes . . .

Move it fast, move it often. Tows behind car or truck at fast driving speed. Spring-mounted axle with roller bearing pneumatic or cushion tired wheels to protect the mixer from road shocks. Fast end charge and discharge. Turns in its own length. Fits into tight places.



## ☐ Smith 4-Wheel Side Discharge Mixer in 7-S and 10-S Sizes . . .

Fast, dependable, light-weight four wheel mixer, with 3 point suspension, spring mounted axles front and rear, pneumatic or cushion tired wheels, automotive type steering, 12 ft. turning radius, and one-man end control.



## ☐ Smith 4-Wheel End Discharge Mixer in 10-S Size Only . . .

Light-weight End Discharge mixer with 4-wheel truck stability. Works in the narrow places, only 6½ ft. wide. Unique truck design with 5 ft. wheelbase, telescopic fold-back towing bar, automotive type axle, spring mounting, 3 point suspension and balanced weight permit high towing speeds. Engine mounted on right hand side. No overhang on traffic side.

### Every Smith a PROFIT-EARNER

Select any type of Smith Mixer with assurance it will lower your mixing costs and add to your profits. Write for literature.

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2849 N. 32nd Street  
Milwaukee Wisconsin



THE BOULDER DAM MIXERS

A 2223-½ (338)

# YOU CAN EXPECT MORE FROM A STANLEY ELECTRIC TOOL

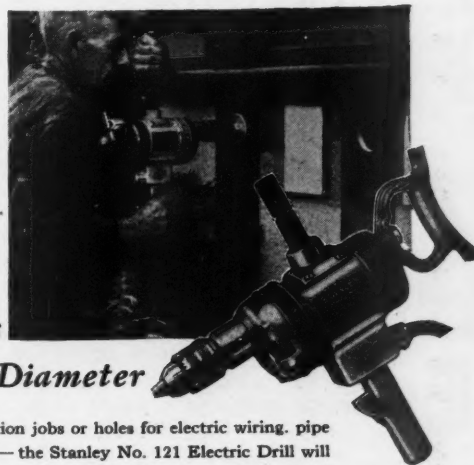
*New  
Duplex  
Handles*



## MAKES STANLEY W-7 SAW Easiest To Use!

Brand new Stanley W-7 Electric Saw has that comfortable "feel or hang". The forward grip gives a balance that makes sawing easy. — use it with one or both hands. The W-7 is compact, light-weight, powered and cooled for continuous operation. Blade is guarded at all times. Single wing nut adjustment for depth of cut. Cuts through 2½", or bevel-cuts 1⅞" lumber at 45°. Stanley also makes Electric Saws with 6", 9", 12" and 16" blades.

## STANLEY DRILL AND HOLE SAWS



## Bore Holes Up to 3 ½" Diameter

For "blow-in" insulation jobs or holes for electric wiring, pipe fitting, gutter drains — the Stanley No. 121 Electric Drill will do these and hundreds of other jobs faster, cleaner. Drills ½" in steel and 1¼" in wood. Takes all 15 sizes of Stanley Hole Saws which cut holes ¾" to 3½" in any material that can be cut with a hack saw. Stainless steel built-in drill gauge graduated from 7/64" to ½".

The hole saws are made of finest high speed alloy steel. A coil spring on the pilot ejects the slug the minute the saw cuts through.

**SEE HOW THESE OUTSTANDING TOOLS  
WILL SAVE YOU MONEY AND TIME.  
ASK FOR A DEMONSTRATION, OR  
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vastly liberalizing FHA financing, making it far easier to build homes to occupy, sell or rent, in both single units and in groups, finds contractors and the home-conscious public tugging at the leashes and agog for facts and figures, designs and definite data, which assure them that they can safely go ahead and BUILD NOW, convinced that along with the favorable financing they can positively get



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The glimpses on these two pages into its contents reveal, more eloquently than any words of ours, that it is preeminently THE HOME BOOK OF THE HOUR.

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(Continued from preceding page)

## Selected Designs

that Offer More House for the Money assembled in six sections, from North, South, East and West

### I—Value in Today's Homes

Modern Efficiency Home—Front Cover Home Illustrates High 1938 Value—From "Shirt Front" Bungalows to Distinctive Homes—Monfort Hills Colonials in two Money-Saving Designs—Perfect English Type Homes—Modern Design Beyond Comparison.

### II—Big Value Small Houses

"Modernistic Manor" from Oklahoma—Concrete Masonry House in Old World Style—6-room Colonials with Architectural Charm—Apartment Cottage—Little but Livable 4 and 5-room Cottages—Devon Cottage of 1938—Period Styled Small Homes—Lindop Houses Show Today's Better Values and Startling Improvements—"Master Built" Plywood House—In the Hillside Heights Development—White Brick 5-room Bungalow—"Plenty of Room without Basement" Interesting 6-room Pittsburgh House—Showing \$1,000 More House for the Money—"What! No Basement? In a New England House? Yet here it is!"—Country Colonial with 1st floor Bedrooms—Compact English Home 25 x 25 feet—Model "House that Grows"—Unusual Small Connecticut Home Built at an Angle.

### III—Low Cost Homes That Pay Their Way

"Dri-Bilt" Ohio House—With 1st floor Bedroom and Bath—4-room Bungalow with Dining Bay—28 x 28 feet with 4 Bedrooms—Glen Ellyn Cape Cod—\$35 per Month Colonials—6-room Cape Cod, with Kitchen in Front—6-room Colonial Norwalk Model Home—California Cottage with Barbeque Fireplace—6 rooms, Attached Garage, no Basement—California Frame-Stucco Bungalow—Cape Cod in Concrete Masonry.

### IV—Larger Homes With Added Value

Shingled Home from the Northwest—California-Monterey Style Hillside House—California Farmhouse Style—Two Good Harold W. Cheel Homes—Home Among the Pines at Orlando, Florida—Hardwood Model Home at Memphis—Country Homestead with City Conveniences—French Norman Home at Moderate Cost—Attractive Georgian Home on Wooded Site—Mott Bros. 33% Greater Value than in 1926—Stone Colonial of Big Value—New Jersey Colonial of Simple Charm—Five Exteriors for Harmon's Model Plan—Six Rooms and Attached Garage—Harmon Dutch and American Colonials—An Old Brick Home in Old Virginia—Colonial with 2-story Portico—"Designed for Entertaining"—Cheelcroft Cottage.

### V—Moderne Homes for Economy

Early American Design in Brick, Boards and Battens—New Style Home at Newark, Ohio, Modern Glass Block Design—Cubist Creation at Glen Ellyn—New Style Economy Home in Detroit—Pittsburgh Home "That Grows"—Modern Efficiency and Style in Texas—Modern St. Louis Home Features New Type of Heating—New Homes Inspire Old Home Remodeling—Garage and Doors Beautify this House—Two No Less than Amazing Basement Transformations.

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3-38

### VI—Savings in Group Home Building

so generously provided for in the new FHA Regulations.

First Modern Row Houses in Chicago—Economical Plan in Kansas Apartments—Modern Two-Flat Building Combines New Materials and Advanced Planning—Those Philadelphia Row Houses, they're Still Building them!—New Style for Old Apartments—Group Home Planning Cuts Cost and Increases Values, Demonstrating the Advantages in Planning Street of Six homes.

## Homes in This Book

are gathered from such wide-apart centers of discriminating taste in homes as:

New Jersey	Philadelphia	Ohio
Long Island	Pittsburgh	Wisconsin
Westchester County	Detroit	St. Louis
Massachusetts	Chicago	Kansas
Connecticut	Chicago Suburbs	Los Angeles
Seattle	Oklahoma	Florida
Memphis	Texas	Virginia

All homes are photographed, with exterior views and large well-dimensioned floor plans for each. Many have beautiful interior views, and detailed specifications. Every one of them is a witness to the truth of the slogan that bids fair to capture the imagination of the nation and loosen its purse strings throughout 1938, "More House for the Money Today." As a whole, the book will make a splendid ally for you as you face the unprecedented conditions ushered in by the swinging into action of the new, vitalized, liberalized 1938 FHA! Be the first in your community to use it!

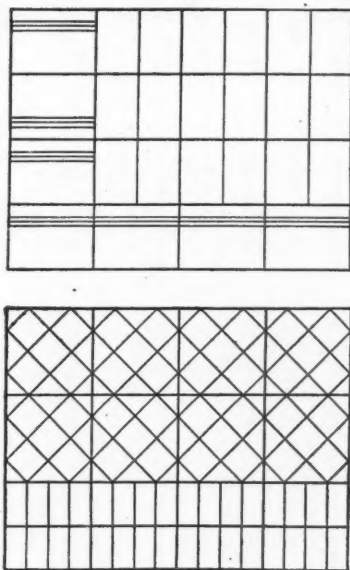
172 pages, same size as this you are now reading. More than 300 illustrations—Interiors, Exteriors, Diagrams, Charts, Graphs, Data Tables, Construction Details, Elevations, etc. Magnificently printed on special paper stock—8 pages in 4 colors on enameled stock—4 pages in 4 colors on cover stock. Cloth-strip reinforced binding. Get YOUR copy at once—it is FREE with your American Builder as above explained.



# ANNOUNCING

## a great forward step in modern construction!

### MASONITE PATTERNED CEILINGS



Two of the many smart patterns made possible by MASONITE PATTERNED CEILINGS

• Durable, eye-appealing MASONITE PATTERNED CEILINGS, made of Genuine MASONITE QUARTRBOARD, can now be bought from lumber dealers. Masonite Corporation fully realizes the importance of this announcement to every one connected with the building industry.

It means that smart, modern ceiling treatments can be included in plans for practically every type of structure, large and small. It means that existing homes, stores and offices can be brought up-to-date without any structural change in present ceilings.

Here's the way it works: Lumber dealers can now supply sections of MASONITE QUARTRBOARD, already beveled and grooved. These sections range from 4 x 4 feet to 2 x 2 feet. They are the basic units of MASONITE PATTERNED CEILINGS and are made up in 16 individual patterns. By working out combinations of two or more units, hundreds of distinct ceilings can be executed.

MASONITE PATTERNED CEILINGS are applied with mastic cement over tight plaster, insulation or any solid, smooth surface. Any size or shape ceiling can be cared for—surprisingly inexpensively. Ask your lumber dealer for complete details, or mail in the coupon for pattern sheets and additional information.

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# MASONITE

THE WONDER WOOD OF A THOUSAND USES

A MISSISSIPPI PRODUCT

SOLD BY LUMBER DEALERS EVERYWHERE

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111 West Washington Street, Chicago, Illinois

Please send me FREE pattern sheets and more information about MASONITE PATTERNED CEILINGS.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

(Continued from page 90)

Maximum protection against termite attack is obtained through the use of pressure treated wood as described in the foregoing, in conjunction with the use of metal shields and other recommendations of the United States Bureau of Entomology and Plant Quarantine.

### Zimmerman Made Owens-Illinois General Manager

W. P. ZIMMERMAN, recognized in the industry as the man who has played the most prominent role in developing Insulux glass block, has been promoted by the Owens-Illinois Glass Company to the position of general manager of the company's Industrial and Structural Products division.

Mr. Zimmerman entered the glass business at Muncie in 1920, soon after returning from overseas, as sales manager of the Hemingray Glass Company, manufacturer of communications and power lines insulators and other pressed ware glass products. When Hemingray merged with Owens-Illinois in 1933, Mr. Zimmerman was made assistant plant manager under the enlarged regime, but before the end of the year had been promoted to the plant managership.

In his new position as general manager of the I & S P division Mr. Zimmerman will co-ordinate manufacturing and sales, and generally supervise all operations of the division.



W. P. ZIMMERMAN

### J-M Announces Plans for \$15,000 Contest

COMPLETE plans for the \$15,000 prize "Better Homes for a Better America" contest to be sponsored by Johns-Manville during the months of April, May, June and July, have been announced by H. M. Shackelford, vice president of the J-M Sales Corporation in charge of sales promotion. In addition to the national contest, detailed plans have been worked out which will enable building materials dealers in all parts of the country to tie in with their own local "Better Homes" contests, thus making contestants eligible for both local and national prizes. Complete details of the plan and material needed to set up local contests as well as to tie in with the national contest will be sent immediately upon the request of building materials dealers.

### To Spend \$1,000,000 on Plywood Promotion

THE Douglas Fir Plywood industry will immediately inaugurate a program of trade promotion involving a contemplated expenditure of \$1,000,000 over a three-year period. The forthcoming campaign will be the most intensive ever put behind a Northwest lumber product. It will be timed to tie in with the newly enacted FHA legislation and with new developments in the plywood industry.

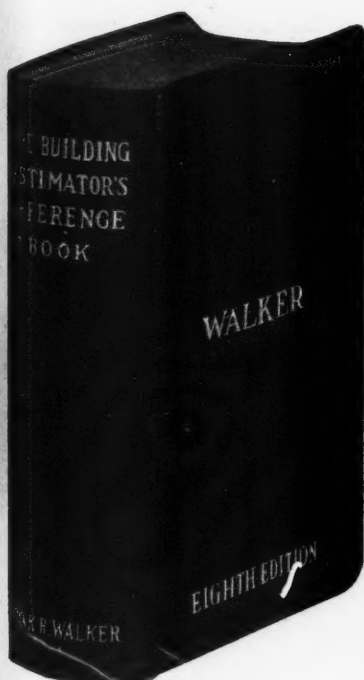
### Holland Announces Furnaces for Low Cost Home Field

AFTER working on the problem for some time, the Holland Furnace Company engineering staff has announced that it has perfected a new furnace which will sell at a much lower price than the deluxe models featured heretofore, although all castings are made of the same Hollandized cast iron. Extensive tests made by the Holland engineering staff show high combustion efficiency. Both in the laboratory and in home installations that have been carefully checked, the new furnace gave satisfactory proof of ability to satisfy all reasonable heating requirements.

NOW READY

The New Eighth Edition of

## The Building Estimator's Reference Book



1700 pages

600 illustrations

600 tables

800 worked out problems

Complete Index

4 1/2 x 6 1/2 inches

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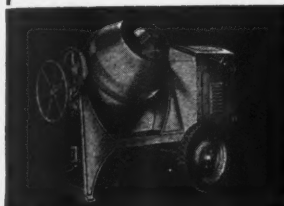
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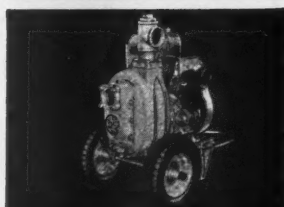
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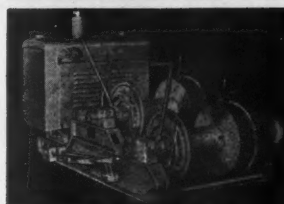
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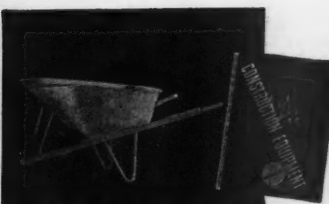
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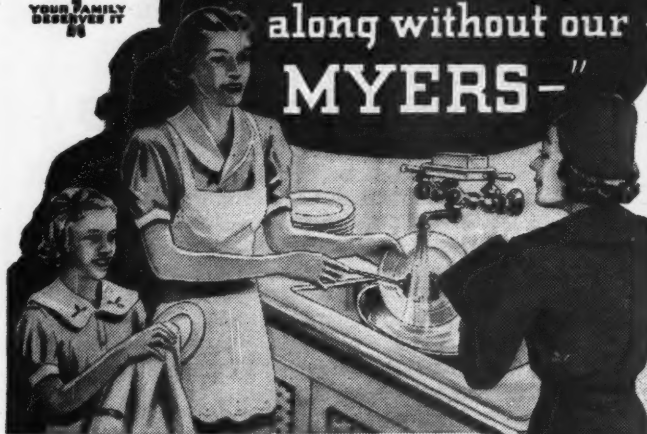
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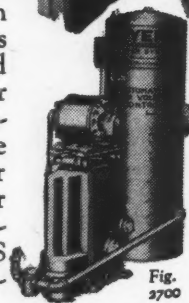


Fig. 2700

#### Summer Air Conditioning

Cool well water, where available, can often be used for lowering air temperatures at a distinct saving in cost over other methods. MYERS engineering data on this subject is at your service. You are invited to write, either for general information or for actual assistance in working out specific air cooling problems.

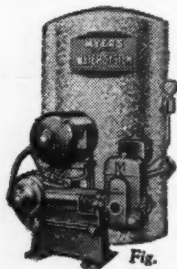


Fig. 3012

#### Sump Pump for Cellar Drainage

A compact economical unit, easily installed in either old or new construction. Entirely automatic in action. Silent centrifugal pump, operated by electric motor. Starts when water enters drain pit; stops when water has been pumped out. Circular on request.

MYERS Electric Water Systems are noted for their silent, efficient, automatic operation — self-starting, self-stopping, self-oiling. Other models for operation by gasoline engine, windmill and hand power.

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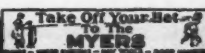
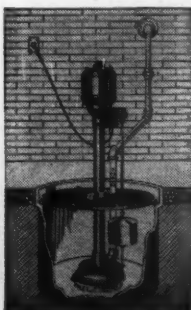
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(WS 8-10)

## LETTERS from Readers on All Subjects

Facts, opinions and advice  
welcomed here

### Disapproves Our "More House for Money" Efforts

Cleveland, O.

To the Editor:

I have read the *American Builder* for the past year. I believe my subscription must be expired by this date, although I have received the January and February numbers of 1938. I am not renewing my subscription. If you have been continuing sending me the numbers regularly, in anticipation of my subscription renewal, I wish you would consider this letter my request to discontinue doing so.

Reason? I don't believe you are in a position to help cure one of the two main evils that today beset the building of homes, namely, the high and excessive cost of materials. Your advertising of materials is too extensive to expect you to do so. You're only human.

I am not disappointed by your failure to publish my rather extensive letter of several months ago, on the killing cost of material and labor in home construction. I could hardly expect you to do so, under the circumstances above cited.

I have been just as frank in criticising the excessive cost and racketeering of labor as I have the excessive cost and profiteering of materials interests. At that I believe the latter more culpable than the former. It is utter folly and an insult to the building public to insist upon pegging labor and materials costs and yet at the same time try to foster construction through such as "Build America" propaganda movements and to sell materials at staggering prices through sheer advertising. "Guaranteed wage income" will be superfluous, if labor costs are right. Excessive advertising of materials will be likewise unnecessary waste, if the prices are in keeping with paying ability.

So why keep up the polite humbug of supporting a journal that is hamstrung? Please cancel my subscription to *American Builder*.

ALLEN BOWER, Real Estate.

### Court Reporter Builds and Sells Homes

Cincinnati, Ohio.

To the Editor:

I am returning herewith the photograph of the Seattle house, plans for which were shown in the December issue of *American Builder*.

I have a site on a hill overlooking the Ohio River, and since this design would seem to be adaptable to it I expect to communicate further with the architect as to cubic footage, cost of plans, etc.

As an indication that I am not idly asking for information I enclose a snapshot of a house which is now in the last stages

(Continued to page 98)



# Send for these four BOOKS BEAUTIFULLY ILLUSTRATED IN COLOR

## The "OVERHEAD DOOR" THE DOOR WITH THE MIRACLE WEDGE



*Blends with every type of construction*

Backed By  
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**OVERHEAD DOOR CORPORATION**  
HARTFORD CITY, INDIANA, U. S. A.

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MADE IN ANY SIZE FOR ANY-OPENING,  
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Please send me literature and full information regarding your product.  
I am interested in doors for the particular purpose as checked:

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*AVAILABLE* in sizes to meet all requirements (in inches and fractions to suit architectural specifications) Adlake windows combine extreme weather-tightness with fine appearance and ease of operation under all conditions of climate.

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## For the Better Outlook

- ADLAKE windows afford the maximum area for glass;
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- Reduce maintenance and heating costs;
- Will not rattle, when open or closed;
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- The *draftless* window, for modern buildings.

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The firebox, damper, smoke-dome and down-draft shelf are all built-in parts of the Heatilator Fireplace. It provides the builder with a complete and correctly designed metal form for the masonry—makes any fireplace easier to build. And it puts no limit on the mantel design.

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The Heatilator is engineered at the factory to the exact proportions required for correct fireplace operation. Correct ratios between the opening, throat and flue areas are assured. The builder's job is greatly simplified—assuring him of a perfectly operating, smokeless fireplace in every installation. More, it assures the home owner of the most advanced type of fireplace on the market.

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The concealed heating chamber of the Heatilator Fireplace draws the cooler air from the room, warms it, and circulates it to every corner—even to adjoining rooms. It is ideal for living rooms . . . solves the heating problem in basement rooms . . . makes camps usable weeks longer.

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Please send complete Heatilator information and prices.

Name.....

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**Heatilator Fireplace**

## Letters Dept.

(Continued from page 96)

of completion and which I hope will be ready for the spring market. I built one a little larger last year and sold it, and as soon as this one is sold I expect to start another. My regular occupation is that of a court reporter, but my hobby has always been houses, and when the opportunity presented I took advantage of it, and have found it very interesting, as well as somewhat profitable, although not as much so as I hope to find on future houses.

I might add that I enjoy your magazine very much and find it quite helpful.

MISS B. M. COLLING.

## Experience with 90 Percent Mortgages

Chicago, Ill.

To the Editor:

The President's recent proposal to the Congress intended primarily to stimulate home buying, construction and interest, is progressive, basically sound and contains many of the elements needed to bring about a permanent prosperity and a contented national life.

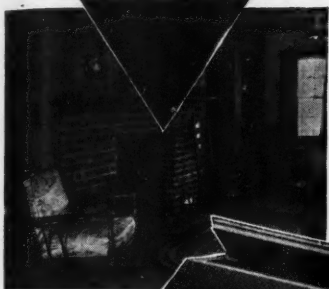
Industry as a whole is lagging, the wheels of business and commerce have slowed down so as to have become almost motionless. Millions are jittery—fearfully, but hopefully, scanning the horizon for encouraging signs for the future. All are asking, "What's the trouble?" In this situation, the writer, a builder of humble homes, but with a vast experience (covering the construction and marketing of about 4,000 homes), presumes to venture his opinion. The trouble is not war scare—not the stock market—not labor troubles (which, by the way, are always more or less the accompaniment of returning prosperity). The real trouble is that the country's life blood basic industry, the building business, is dead.

The proposal to permit maximum loans of 90 percent of real value is not merely attractive—it is good business—it is sound business. For generations, the families of modest incomes have been purchasing homes with a 10 percent down payment. True, there have been second, and often third mortgages, but in whatever the form may have been, the purchaser, after paying his 10 percent cash, has assumed a 90 percent or greater obligation. The evil of the situation was that the home buyer had to make independent payments on each of his two or three forms of obligation, first mortgages often matured in three to five years, second and third mortgages often became due for payment in full very soon after the home buyer took possession of his home. Often the holders of junior mortgages insisted on full payment at early maturity dates, or frequently when such junior liens became due and were renewed (again for a short term), interest rates and renewal fees were prohibitive—thus the burden often became too great and the home buyer suffered. Had these homes been financed by a single lien, over a long period of years, almost none of these home buying ventures would have failed to pay out in full. To illustrate: Some years ago the writer's Company constructed and marketed a group of 500 modest brick homes on the Northwest Side of the City of Chicago. These homes were sold on a cash payment of 3½% and 7/10 of 1% per month including interest. As many as fifty of these homes were sold in a single day. The contracts (representing buyer's obligation in addition to first mortgage) were sold to a large Chicago banking institution. Some years later, the President of this banking house told the writer that these contracts had been paid out 100 percent, represented the finest investment he had ever recommended—also, that most of the contracts had paid out in full long before maturity.

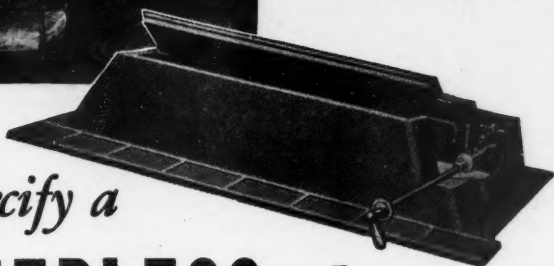
What bearing does all this have on the President's proposal? Simply this, the security was primarily in the long time, comfort producing, terms of payment. This experience is potent proof that the President's proposal would not make Uncle Sam the largest owner of Real Estate in the Country, as has been suggested by one critic. Comfortable payments on soundly constructed homes are the best guarantee of the certainty of such payments, and, just as important if not more so, is the fact that an easy payment plan leaves the purchaser with a surplus in his weekly pay envelope, to be expended on other needs or modest luxuries, thus providing the stimulating factor of prosperity all along the line.

JOHN MILLS,  
Chairman of the Board, Mills and Sons, Inc.

## BUILD IT RIGHT



- No smoke
- No heat loss
- No back draft
- Lifetime service



## Specify a PEERLESS damper

EXTERNAL fireplace beauty means little unless the damper positively stops back drafts, smoke and heat losses. Peerless Dome Dampers assure complete absence of these annoyances and also seal the flue when fireplace is not in use. This is a necessity for efficient operation of air conditioning. Three models to choose from—Rotary, Poker or Chain Control—all for lifetime service. Write for literature on these and other Peerless products.

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Specify and use Resnprest for cleaner, faster, easier, more permanent and more economical jobs. Available from 1/8" to 1 1/2" thick, in sizes up to 72" x 144" sanded and up to 96" x 144" unsanded. Ask your dealer for Resnprest or write

**M and M Woodworking Company**  
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A Mott Brothers development at Garden City, N. Y.

## This SPECULATIVE BUILDER has PROFITABLY used



## ON FLOORS AND WOODWORK OF OVER 800 HOMES

MOTT BROTHERS of Garden City, N. Y., know the importance of using materials and equipment which "help sell the house". They know, too, that their reputation and future sales depend on customer satisfaction. It is significant that *Minwax Flat Finish* has been used on more than 800 homes Mott Brothers have built during the past eight years!

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... say Mott Brothers, and they add: "We have found *Minwax* a thoroughly practical material and one which is preferred by owners of fine homes."

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Minwax used on  
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### MAKE BETTER ROOFS

Edwards Steel Shingles have every desirable feature of a really good roof and none of the undesirable features. They not only protect from wind and weather but also from fire and lightning—not only look better but wear longer and cost less for the service they give.

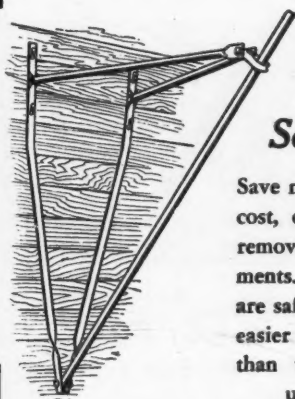
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**RELIABLE**  
SCAFFOLDING BRACKETS

## Letters Dept.

(Continued from page 98)

### Modernizing Foreclosed Homes for Rental

Dallas, Texas.

To the Editor:

Find enclosed check for 3 year renewal to the *American Builder*. I consider this a fine investment. For over 20 years it was my policy to invest my savings in first lien mortgages. Then came the depression. I seemed to have made quite a few friends in making these loans; so much so that some of these people felt so kindly towards me that when the loan became due they not only gave up the property but left the tax unpaid and the property in a helova fix. At first the matter did upset me but I weathered the proposition.

I took the property piece by piece and made these homes into modern, up-to-date cottages, not only remodeling the homes but making the outside surroundings attractive. In place of selling these homes I rented them and for nearly 10 years, with as many as thirty homes, I seldom have a vacancy.

People like to rent nice, clean homes and at a rental that pays to own the property. A great many of the new added features come from no other information than I gather from the *American Builder*. So you see why I consider this fine book of knowledge a good investment for myself.

PHILIP FISCHL

### Job Tool House of Plywood

Hoquiam, Washington.

To the Editor:

Who says that a job tool house can not be made attractive? The enclosed photograph is of a structure built and used by Frank H. Brownett, Builder, of Jacksonville, Florida.

The side walls are made of  $\frac{1}{4}$ " Super-Harbord; the room and floor are of  $\frac{1}{8}$ " Super-Harbord. The building is so light



that four men can lift it up and put it on a flat-bed truck to be moved from one job site to another.

You are welcome to use this photograph editorially, if you wish.  
HARBOR PLYWOOD CORPORATION,  
By M. S. Munson.

### Woods That Win Prizes

Newark, N.J.

To the Editor:

The average American is always interested in the strongest, the quickest, the longest and the largest of anything, and we have a mild curiosity regarding the worst whenever the worst can be positively located.

Not only is it interesting to know the best and the worst re-  
(Continued to page 102)

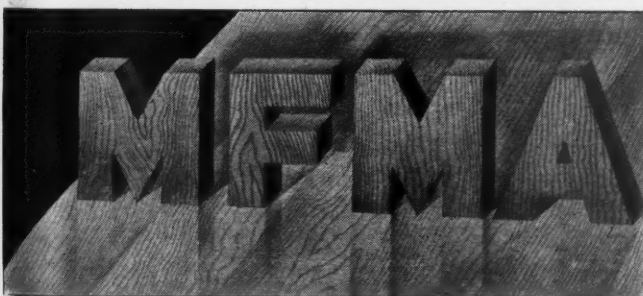
# ... AND NO EFFORT TO SELL IT!

Consider how easy "Over-the-Top" Door Equipment is to install and operate and you'll know why builders recommend it and find it so easy to sell. Requires no excess trackage, no weights, pulleys, cables, chains. Owners like its remarkable convenience, its operating ease, and attractive appearance. The price is reasonable, no special doors are required, and there's a size to fit every garage opening. "Over-the-Top" Door Equipment takes guesswork out of sales, puts extra profits in your pocket. Don't delay any longer . . . write today for full details.

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**OVER-THE-TOP<sup>®</sup> DOOR EQUIPMENT**



## FIRST CHOICE FOR BETTER HOMES

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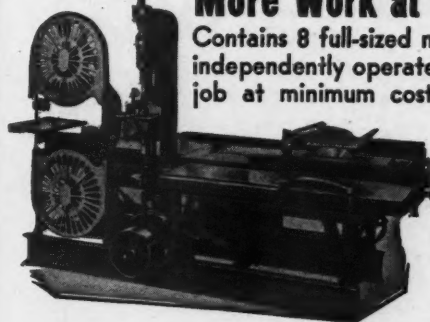
The trademark MFMA on Maple Flooring guarantees it to be *all Northern Hard Maple* of the grade stamped thereon. It is your protection against substitution on every job. By specifying MFMA Maple, you insure floors of maximum uniformity, quality, and service that will maintain your reputation for quality work.

MAPLE FLOORING MANUFACTURERS ASSOCIATION  
1781 McCormick Building, Chicago

# Floor with Maple

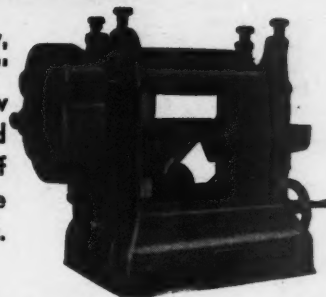
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Contains 8 full-sized machines, each independently operated. Does whole job at minimum cost.



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Rip and cross-cut saw,  
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12" BENCH PLANER

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Takes pieces as short as 9"  
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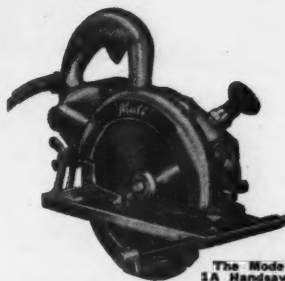
Good Woodworking Machines Since 1887

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The Model  
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These powerful, safe, labor saving electric tools will help you make bigger profits on every contract. You can crosscut or rip *easily, cleanly, and accurately* ten times faster than any man can do the work with an ordinary handsaw.

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Successors to  
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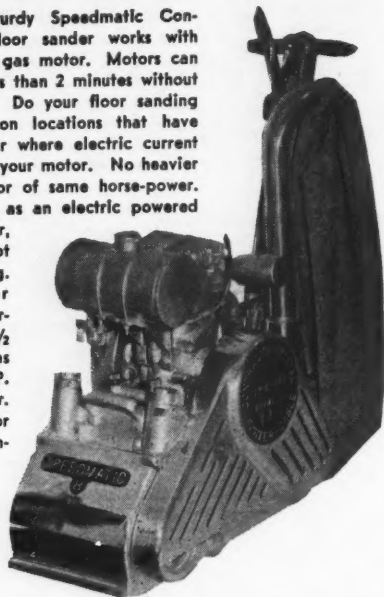
Without obligation, please send additional information  
on the Model 1A and other MALL Electric Handsaws.

NAME .....  
ADDRESS .....  
CITY ..... STATE .....



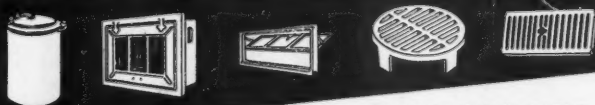
## THIS FLOOR SANDER WORKS ANYWHERE

This compact, sturdy Speedmatic Contractor Special floor sander works with either electric or gas motor. Motors can be changed in less than 2 minutes without the use of tools. Do your floor sanding anywhere. Even on locations that have not been wired or where electric current is not suitable for your motor. No heavier than electric motor of same horse-power. Fast and efficient as an electric powered sander—no chatter, motor does not race when idling. The Contractor Special can be furnished with 1½ H.P. Air cooled gas engine or 1½ H.P. electric motor. Write today for more complete information—

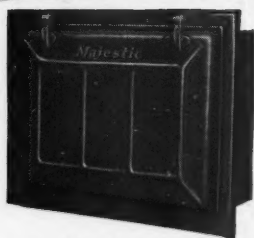


*The* **PORTER-CABLE** SYRACUSE, N. Y.  
**MACHINE COMPANY**  
 1721-3 N. Salina St. Syracuse, N. Y.

## MAJESTIC

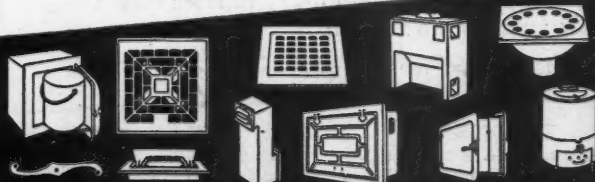


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Majestic's new Model 550 coal chute is definitely designed for the low cost home and competitive market. A durable, practically indestructible coal chute at a new surprisingly low price. But a typical Majestic value! Frame is of extra heavy rolled steel. Electrically welded mitered corners. Sturdy Malleable Iron hinges are securely welded to frame and riveted to door. Other features include automatic burglar proof lock, die pressed steel door with reinforcing ridges, heavy angle reinforced body integral with front and anchor lugs on side of body to hold chute in masonry. Finish is rust resisting asphaltum. The **The MAJESTIC Co.** HUNTINGTON, INDIANA

Majestic 550 Coal Chute is a real buy. Write for complete details and prices.



**BUILDING NECESSITIES**

## Letters Dept.

(Continued from page 100)

garding wood, but such information is valuable. That is why, during a period of some 15 years, 130,000 tests were conducted by the Research Branch of the U.S. Forest Service to determine which woods are best and which are poorest.

Hickory is the heaviest wood grown in the United States. The honors for heaviness are equally divided between two varieties of hickory, one known as big leaf shagbark hickory, grown at Napoleon, Ohio, and the other known as pignut hickory, grown in Webster County, W. Virginia. Each of these hickories has a weight of 55 lb. per cu. ft. when kiln dried. The lightest wood when green is western red cedar, grown in Missoula County, Mont. It weighs 24 lb. per cu. ft. when green and 21 lb. when kiln dried. Northern white cedar, grown in Shawano County, Wis., also weighs 21 lb. per cu. ft., when kiln dried.

Black locust grown in Sevier County, Tenn., is strongest in resisting bending. It is 60 percent stronger than oak. Black willow grown in Sauk County, Wis., is the weakest in this respect, being only 39 percent as strong as oak.

Osage orange grown in Morgan County, Ind., is strongest in resisting compression perpendicular to the grain, being 211 percent stronger than oak. The poorest strength is tied by two woods, namely, basswood grown in Marathon County, Wis., which is only 27 percent as strong as oak and the same black willow twice mentioned above which is equally as weak. The strongest is 11.5 times as strong as the weakest.

The same osage orange grown in Morgan County, Ind., is the hardest. That is, it is the most difficult to penetrate. It is 94 percent harder than oak.

It is evident that the osage orange grown in Morgan County, Ind., is a very excellent wood, carrying away three of the first prizes: For maximum strength in compression perpendicular to the grain, maximum hardness, and maximum shock resisting ability. Black willow, grown in Sauk County, Wis., is undoubtedly the poorest of all, being awarded five of the booby prizes, namely: Weakest in bending, weakest in compression parallel to the grain, weakest in compression perpendicular to the grain; weakest in stiffness; and weakest in resisting shear. W. F. SCHAPHORST, M.E.

\*\*\*

## 5000 Demonstration Homes!

(Continued from page 46)

experiences gained in this program offer a guide for the conduct of this year's program. The average cost in 300 cities of the "B" house in last year's program was \$3,165, and the "D" house average was \$3,555. The average for the "E" house was \$3,838. It is felt that this was conclusive evidence that low-cost small homes can be built and sold. The 1938 designs are improved in appearance and are more efficiently laid out for economical construction.

A large group of manufacturers is co-operating by preparing special plans for the installation of their equipment materials or products. There is no compulsion to force a builder or dealer to use any particular type of material or equipment, but every effort is being made by the co-operating manufacturers to provide complete layouts and installation details that will make for economical and efficient installation of equipment or products; and for economical operation of the house afterwards. Thousands of dollars have been spent in special studies of the floor plans of these houses and the special details governing equipment installation. An important feature is the basic low cost heating system layout made for each home. and the specially laid out kitchens and bathrooms designed to make use of low cost, but highly efficient, equipment.

A large Demonstration Home manual describing the program, showing the home designs, and suggesting the course to be followed in obtaining blue prints and planning a Demonstration Program, is available to interested builders and dealers from the National Small Home Demonstration Headquarters.

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*Flexible*  
**WALL TILE**

Tile-Tex Decorative Wall Tile is easily applied in old or new buildings. Made in a wide range of colors and gives a permanent wall of lasting beauty at low cost. Ideal for Bathrooms, Kitchens, Stores, Barber Shops, Beauty Shops, Public Buildings, Restaurants, Bars and Lobbies.

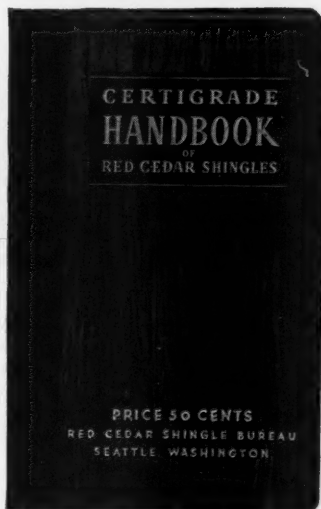
Tile-Tex is a unit-laid wall tile that will not craze, crack, warp or mar. Can be applied right over plaster walls or wall board.

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**100  
PAGES**

A builder's handbook illustrated with working drawings detailing the application of Certigrade Cedar Shingles. Includes grades and their uses; application—pitch, covering capacity, sheathing, valleys, flashings, nails; types of roofs; double coursing on walls; over-roofing; staining and painting; master specifications. Write Red Cedar Shingle Bureau, Seattle, Wash., U. S. A., or Vancouver, B. C., Canada, for your copy, free.

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SPOT SASH CORD**

Made in only one quality—the best we can make after more than half a century's experience. No sash cord can be too good. One replacement job makes the cheapest cord cost more for a whole house than Spot Cord. It outwears any other material, and is noiseless. Substitution can be readily detected, because the Colored Spots (Reg. U.S. Pat. Off.) identify it. Write for samples and specification data.

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**NEW 5-S  
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## Rain Can't Come In

### THE ILGETTE KITCHEN VENTILATOR

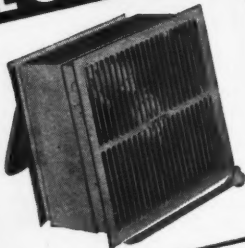
A one-piece weather-tight metal door keeps out driving rain, snow, and wind—there's no danger of moisture seeping into the interior construction, causing expensive repairs, motor trouble, and constant worry.

This dependable Ilgette weather-proof construction is highly praised by builders who practice economy and caution. From every point of view it pays to install kitchen ventilators made by Ilg. Send for new price list and special illustrated bulletin.

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### FLOOR MACHINERY MANUFACTURE

A machine that has become the talk of the world. Its new features are revolutionizing floor sanding. Compare its cost cutting results—check its amazing capacity for finest quality work at high speed and you will agree that the toughest and biggest jobs can be handled with ease, leaving a large margin for **EXTRA BIG PROFITS** and more jobs. Roughs out old and new floors, sanding right up to the quarter-round, picking up all dirt and dust and leaving a ballroom finish on any floor. Pays for itself out of savings in time, labor and materials.

The perfectly balanced high-speed sanding drum covered with soft resilient rubber, automatically conforms to all floor irregularities. Ball bearing equipped throughout. Full V-Belt drive. Interchange throw switch for either 110 or 220 volts. Many machines cost more, but none is so efficient, so free from repairs, so certain of high speed results.

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CITY \_\_\_\_\_

STATE \_\_\_\_\_



Unconditional  
5-YEAR  
GUARANTEE

## Summary of FHA Amendments

(Continued from page 45)

- c. When public water supply is not available the requirements of a and b above are not applicable.
7. **Outdoor Toilets.**  
Outdoor toilets will not be permitted on lots less than 20,000 square feet in area.

### Wayside Stands, Garages, Farm Structures Also Eligible

Provision is made under Title 1 for the financing of new small structures, such as wayside stands, filling stations, garages, barns, farm buildings, commercial and business structures up to \$2,500 in value. Such loans must be paid off in 5 years and 32 days. The maximum total charge which may be made is the same as for modernizing loans—\$5 discount for each \$100 original face amount. It should be pointed out that the 10 percent insurance on loans made under Title I by banks and other institutions is on the *total amount of loans outstanding*, rather than on each individual loan. Experience has shown that the losses on a group of loans have rarely run over 1 percent, so that it is felt the 10 percent insurance is ample protection for the loaning institution.

Builders interested in modernizing and Title I loans should write FHA for copies of booklet FHE 1, "Property Improvement Loans under Title I," which gives complete rules and regulations, financial tables and provisions of the Act.

### Vast Extension to National Credit for Home Building

The most far reaching and fundamental improvement made possible by the 1938 Housing Act Amendments is the setting up of what, in effect, is a national credit structure for insured mortgages. Title III of the original Bill is amended to provide for the formation of national mortgage associations which can purchase insured mortgages, make direct mortgage loans to builders and sell debentures backed by these mortgages to the public. *Such debentures are exempt from all taxation, and the operation and capital structure of the mortgage associations are also tax exempt.*

To get the ball rolling, the Reconstruction Finance Corporation on February 10 announced the establishment of the first National Mortgage Association of Washington with a paid-in capital stock of \$10,000,000. Chairman Jesse H. Jones announced that an additional \$40,000,000 is being held in reserve for increasing this capitalization or for the subscription to the capitalization of other national mortgage associations that may be set up by private business. It is expected that a number will be formed in the near future.

Establishment of national mortgage associations of this type, in effect, provide mortgage discount banks which permit the flow of capital for home building from one part of the country to another, and enable a bank or lending institution to sell or discount its mortgages on short notice. Each mortgage association is empowered to issue debentures up to 20 times its paid-in capital and surplus. *Thus the \$50,000,000 set aside by the RFC will alone provide a potential capital of a billion dollars for the buying of mortgages or for the making of direct mortgage loans.* The Mortgage Association set up by the RFC will not make direct mortgage loans on individual homes but is empowered to make loans on groups of houses of 10 or more, such as are provided in Sections 207 and 210 of the Act. Since the debentures to be sold

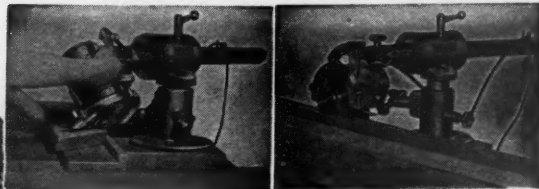
(Continued to page 106)



## The *Speed*matic Saves More Time and Money THIS NEW WAY

A sturdy, accurate parallel swing saw that rips, cross-cuts, miters, bevels, compound miters, dados, plows, grooves and tenons. Fast and accurate for cutting duplicate parts. Swings to any position. Can be used on marble, slate, light metals and hard materials. Quickly detached for use as a portable hand-saw.

Write today for more information, no obligation.



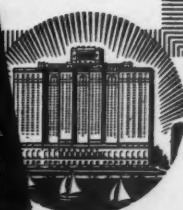
*The* PORTER-CABLE  
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1721-3 N. Salina St. Syracuse, N. Y.

## ...MEN IN THE MAJOR LEAGUES

Those men every community regards as leaders . . . in turn demand similar superior performance. In Chicago these men find at The Stevens the atmosphere . . . the comfort they demand of a hotel. That's the reason they call The Stevens, "America's Grand Hotel." Their strongest endorsements are their repeated autographs on our register.

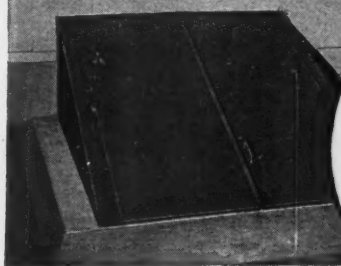
OTTO K. EITEL, Managing Director

**STEVENS**  
*America's Grand Hotel*  
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Room, with Bath, from \$3

Do away with  
**DEAD END CELLARS**  
this modern way



**BILCO**  
Copper-Steel  
cellar bulkheads  
make home cellars  
safe, convenient,  
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As most cellars today provide for recreation rooms, one way in and out is not enough. A direct exit to the yard is needed for safety, convenience. That's why progressive architects and builders are using Bilco All-Metal Bulkheads. Precision made, of copper steel — easy to assemble, Bilco Bulkheads last forever. Architecturally attractive. Fire, water, decay and termite proof. Can't warp, sag or swell. Work perfectly always. Strong steel doors, when locked, give added security. Moderate in cost.

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**NEW HAVEN, CONN.**  
Sidewalk Doors - - - - - Cellar Bulkheads



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Make Big Money  
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## NARROW TRIM *plus Dependability!*

Now you can furnish frames with Narrow Mullions and Casings and still use dependable "Grand Rapids" Sash Pulleys, combined with the new style Flat Sash Weights. Mullions 3" or less.

No springs to break. No costly replacements and adjustment calls. No installation troubles. No restriction to one make of KD frame.

These new Pulleys and Weights are available to everyone. Some of the largest KD mills are featuring them in their 1938 lines. Many small mills are using one of the new Pulleys (No. 152) that requires only a drive pulley mortise.

If you buy your frames, ask the mill about Narrow Trim with "Grand Rapids" 1½" wheel Pulleys and Flat Weights. If you make your own frames, write us for Circular 0150.

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Branch Sales Offices:  
NEW YORK • CHICAGO • FT. SMITH, ARK. **EASY ON THE EYES**

## Summary of FHA Amendments

(Continued from page 104)

by the National Mortgage Association are backed by insured mortgages, they will be considered a highly conservative investment, and since they are also tax exempt it is thought that they will prove a highly desirable form of investment as well.

Certain changes in the regulations of the Federal Reserve Board and of the Federal Deposit Insurance Corporation pertaining to FHA insured mortgages also tend to make this form of investment more desirable to banks. A bank or a mortgage broker in any small town anywhere in the country is able to discount his local insured mortgages, sell them or borrow on them on short notice, thus giving this form of investment a liquidity that has long been desired and greatly increasing the ability of the small-town lending institution to extend credit for home building.

## How to Estimate Accurately

(Continued from page 75)

*Figuring the form content:*

Main building footings:  $\frac{14 \times 6}{144} \times 159 = 92\frac{3}{4}$  cu. ft.

Main building walls:  $\frac{8 \times 24}{144} \times 159 = 212$  cu. ft.

Porch footings:  $\frac{12 \times 6}{144} \times 32$  equals 16 cubic feet.

Porch walls:  $\frac{6 \times 28}{144} \times 32$  equals 37-1/3 cubic feet.

Fireplace footing:  $3' \times 6'-6" \times 12"$  (depth) equals 19½ cubic feet.

Fireplace base:  $\frac{8 \times 30}{144} \times 17$  equals 28-1/3 cubic feet.

Piers: To find average size:  $\frac{16 \text{ plus } 8}{2}$  equals 12";

$\frac{12 \times 12 \times 14}{1728} \times 19$  equals 22-1/6 cubic feet; total in

foundation, 428-1/12 or 429 cubic feet; 429 plus 1/3 equals 429 plus 143 or 572 cu. ft. increased form content.

*Figuring the materials:*

For a 1:3:4 mix 1/7 is cement; 3/7 is sand and 4/7 is rock.

1/7 of 572 equals 81-5/7 or 82 sacks cement.

3/7 of 572 equals 245-1/7 or 246 cubic feet of sand.

4/7 of 572 equals 326-6/7 or 327 cubic feet of rock.

Using the table the solution is as follows:

For a 1:3:4 mix the proportions of materials are .20 cement; .58 sand and .78 rock.

429 x .20 equals 85.8 or 86 sacks cement.

429 x .58 equals 248.82 or 249 cubic feet of sand.

429 x .78 equals 334.62 or 335 cubic feet of rock.

*Changing the sand and rocks to tons:*

$\frac{246}{20}$  equals 12.3 or 12½ tons of sand

$\frac{327}{20}$  equals 16.35 or 16½ tons rock—or

changing sand and rock to cubic yards

$\frac{246}{27}$  equals 9-1/9 or 9 yards of sand

$\frac{327}{27}$  equals 12-1/9 or 12 yards rock

The amounts to order for the job are therefore:

82 sacks cement (86 if table is used)

12½ tons or 9 yards of sand

16½ tons or 12 yards rock

(Underpinning will be discussed in an early issue)

## "SAVE DOLLARS EVERY DAY—THE DE WALT WAY" "GN" Model for Building Contractors

Here is a popular priced model you can buy on Easy Payment terms. It has all the flexibility and accuracy of heavier De Walts. Ideal because easily portable right to the job and operating on minimum adequate power consumption. Quickly financed through the savings effected.



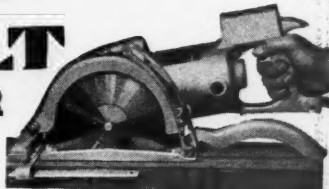
America's leading builders save 20 to 30%. Let us show you how right on your job—no obligation. Write today.

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De Walt - Wodack Portable Electric Hand Saw. Powerful yet light. Several models. Many improvements over other styles.

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*It talks through  
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## "BRADLEY BRAND" the standard of comparison in HARDWOOD FLOORING OAK - - - - BEECH



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Here's a more durable door! With sections of heavy, galvanized steel it can't sag, warp, split or pull apart. The all steel RoL-Top is weather proof, burglar proof, vermin proof and fire repellent. Perfectly counterbalanced and opening upward over ice, snow, swollen ground and obstructions, it's convenient and effortless in operation the year around. Made in any size, for motor or manual operation and for easy installation in any building, old or new. Write for details.

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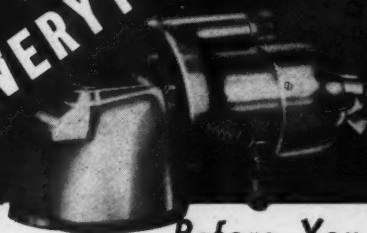
Everything the contractor needs from Reinforcing Bars to Stainless Steel—Foundation Bolts to Structurals, is carried in Ryerson stock ready for Immediate Shipment. Experienced crews—complete equipment—and special dispatching methods assure quick accurate execution according to specification, and delivery on schedule. You can depend on Ryerson Steel-Service for both emergency and regular requirements. No order too small for personal attention or too large for immediate shipment.

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## RYERSON *Certified* STEELS

Stocks include: Bars, Structurals, Rails, Sheets, Floor Plate, Expanded Metal, Rivets, Bolts, Welding Rod, etc.

## HOLD EVERYTHING!



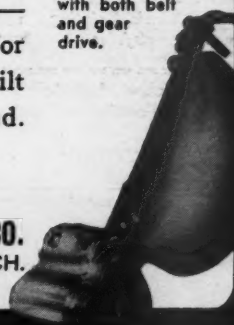
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You'll recognize it immediately as the slickest machine of its kind ever invented. Extremely easy to operate—really dustless—a bearcat for work of finest quality—built to last—reasonably priced.

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Write immediately for  
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## NEW TOOLS CUT YOUR LABOR COST

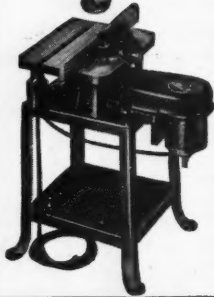
10-inch Saw and 6-inch. Jointer Combination Unit.



Woodworking plants, large and small, are rapidly adopting DELTA "Low Cost" Tools to supplement larger, more expensive machines and to handle lighter production work. They cost little and are accurate, efficient, convenient. They save time and labor, cut costs, quickly pay for themselves.

### New Shaper Unit—New 10' Saw

These two new DELTA tools alone are astonishing builders by the remarkable machine value they offer. But get the facts about the complete DELTA line including Circular Saws, Jointers, Scroll Saws, Band Saws, Sanders, Shapers, Drill Presses, Lathes, Grinders—and a full line of accessories. You will be astonished at the low prices of Delta Tools. Send Quick-mail Coupon No. 7 today for name of nearest Delta Dealer and Free 1938 catalog.



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### SHELF CONSTRUCTION

All shelves made of 5-ply lumber, securely daddod into side panels. Painting completely seals joint.

Kitchen problems are quickly solved when you specify Kitchen Maid. Home owners know this famous name and its reputation for beautiful, appropriate cabinetry. You will appreciate the time-tested wood construction, ease of installation, flexibility. And everyone will welcome the worthwhile savings of prefabricated, factory-finished Kitchen Maid units. In 12 attractive colors. Write for new catalog on complete Kitchen Maid line.

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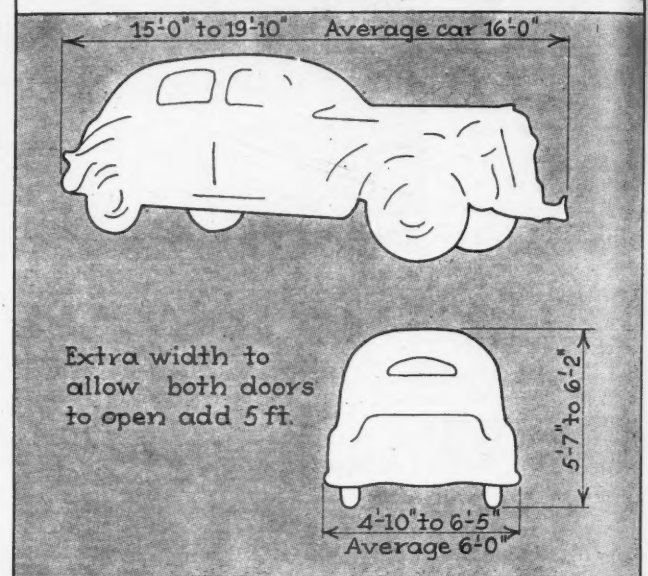
## Drive and Garage Turns

(Continued from page 73)

the car this arrangement requires a rather extensive area.

A good piece of practical advice is to make an actual trial in connection with a proposed property, using the largest sized car likely to be owned by the buyer. If a trial cannot be made on the site, it can be done on some other level spot marked off with stakes.

### AUTOMOBILE SIZES



"AVERAGE" SIZES of automobiles are shown above, but an "average" is a dangerous thing. Garage and driveway dimensions should be calculated on basis large enough to accommodate biggest type cars.

### MOTOR CAR DIMENSIONS (1938)

	*(L)	*(W.B.)	*(W)	*(H)	*(C)	*(T)	*(T.D.)
Ford (Standard)	15'-4"	112"	5'-9 1/2"	5'-8 1/2"	9 1/2"	4'-10 1/4"	43'-0"
Chevrolet (Master)	15'-7 1/4"	112 1/4"	5'-10 1/4"	5'-8 1/4"	8 1/2"	4'-11"	42'-6"
Oldsmobile (6)	15'-8"	117"	5'-0 1/4"	5'-8 3/4"	7"	4'-11"	38'-6"
Pontiac (6)	15'-9 1/4"	112"	5'-10 3/4"	5'-8 3/4"	10 3/4"	4'-9 3/4"	40'-0"
Terraplane	15'-10 1/2"	117"	5'-11 1/4"	5'-10 1/2"	—	4'-11"	41'-0"
Pontiac (8)	16'-1 1/4"	116 1/4"	5'-10 3/4"	5'-8 3/4"	11"	4'-9 3/4"	41'-0"
Plymouth	16'-2 1/4"	112"	5'-10 1/2"	5'-8 1/2"	10 1/4"	5'-0"	—
Hudson (6)	16'-3 1/2"	122"	5'-11 1/4"	5'-10 1/2"	—	4'-11"	42'-0"
Packard (6)	16'-4 1/4"	122"	5'-1 1/4"	5'-8"	9 1/2"	5'-0"	42'-0"
Oldsmobile (8)	16'-4 3/4"	124"	5'-0 1/4"	5'-7 1/4"	8"	4'-11"	42'-0"
Dodge	16'-5"	115"	5'-10 1/2"	5'-8 1/2"	10 1/2"	5'-0 1/4"	—
Studebaker	16'-7 1/4"	122"	5'-1"	5'-8 1/4"	12 1/4"	4'-11 1/2"	45'-0"
De Soto	16'-7 1/2"	119"	5'-10 1/2"	5'-8 1/2"	10"	5'-0 1/4"	—
Buick (41)	16'-8 1/4"	122"	5'-0"	5'-9 1/4"	8 1/4"	4'-11 1/2"	44'-0"
La Salle (8)	16'-9 3/4"	124"	5'-3 3/4"	5'-7 1/2"	10 1/2"	4'-11"	44'-8"
Chrysler (18)	17'-2"	123"	5'-1"	5'-8 3/4"	10 1/2"	5'-1"	—
Cadillac (65)	17'-7 1/2"	132"	5'-5 1/4"	5'-9 3/4"	10 3/4"	5'-2 1/2"	46'-9"
Buick (90)	18'-3 1/2"	140"	5'-4 1/4"	5'-11 1/2"	9 1/2"	5'-2 1/2"	48'-0"
Cadillac (90)	18'-4 1/2"	141"	5'-5 3/4"	5'-10"	11"	5'-2 1/2"	48'-0"
Pierce Arrow	18'-7 1/2"	147"	5'-2"	5'-1 1/2"	12"	5'-1 1/2"	52'-4"
Chrysler (20)	18'-8 1/2"	144"	5'-4"	5'-10 1/4"	11 1/2"	5'-3"	—
Packard (12)	19'-2 1/4"	130 1/4"	5'-2 3/4"	5'-11"	10"	5'-1"	49'-0"

(\* NOTE: Information supplied by Automobile Manufacturers. (L) length; (W.B.) wheel base; (W) width; (H) height; (C) distance from ground to underside of running board; (T) tire tread; (T.D.) turning diameter (diameter of smallest walled-in circle in which the car will make a complete turn). Dimensions are shown to nearest 1/4".

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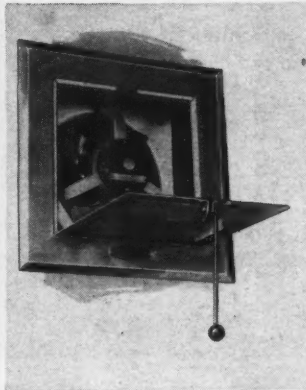
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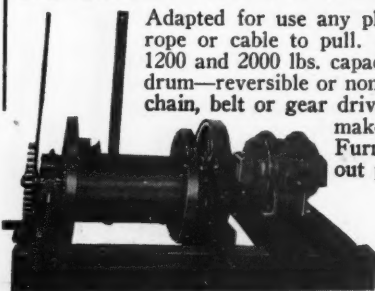
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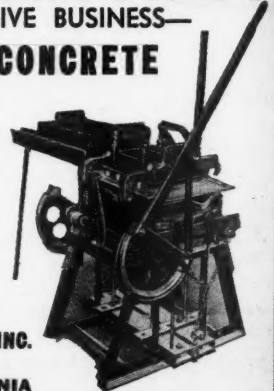
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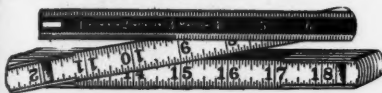
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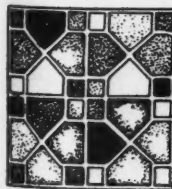
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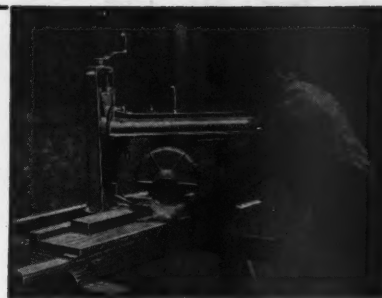
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**48A—Dampproofing Foundation Walls**—Specification, construction details and work sheet for architects and builders covering latest procedure for protecting against damp basements.—MINWAX CO. Inc., 11 W. 42nd St., New York City.

**48—Radiator Data**—"Don't Be Hoodwinked" is the intriguing title of a 16-page handbook which makes a serious analytical study of the problems of heating and ventilating in the home. Important facts regarding radiator heating are brought out, with special attention to the National Art radiators and Aero convectors.—NATIONAL RADIATOR CORP., Johnstown, Pa.

**49—Revolutionary Water Heater**—"Like a Sponge" (because it soaks up heat) is a bright, informative broadside describing the Thermo-Voir for providing unlimited hot water by way of the house heating boiler. This is offered as an engineering triumph in water heating efficiency.—BELL & GOSSETT CO., 3000 Wallace St., Chicago.

**50—Air Conditioning**—"Sunbeam Air Conditioning" is one of a series of new handbooks presenting the new line of coal, gas and oil burning heaters and air conditioners offered by a division of the American Radiator & Standard Sanitary Corp.—THE FOX FURNACE CO., Elyria, O.

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**58—Gothic Roof Rafters**—"Rilco Non-Sag Gothic Rafters" is a 10-page data sheet prepared by the Rock Island Lumber Co., Div. of Weyerhaeuser to illustrate the Rilco Gothic rafters. Numerous photographs of impressive curved roof barns, barn layouts and details of the

rafter and roof construction make this handbook particularly interesting.—RILCO LAMINATED PRODUCTS, Albert Lea, Minn.

**59—The Reinforced Concrete House**—A new 24-page profusely illustrated book showing homes in all price ranges and varieties of climate. General photographs and close-up views giving surface texture, dimensioned floor plans and other helpful data are included.—PORTLAND CEMENT ASSN., 33 W. Grand Ave., Chicago, Ill.

**60—Graph Sheets and Co-ordinate Papers**—A new catalog of 64 pages presents the K. & E. Line of graph sheets, co-ordinate papers and cloths with illustrations of their uses. A study of this is an education in itself for architects, engineers, draftsmen and accountants.—KEUFFEL & ESSER CO., Hoboken, N.J.

**61—Rubber Flooring**—Complete information, specifications, color chart and other data on both rubber flooring and wall material are combined in a new catalog. Detailed information on various accessories, such as cove bases, plinths, inside and outside corners, etc., is also presented.—GOODYEAR TIRE & RUBBER CO., Inc., Akron, O.

**62—Chicago Faucets**—New Catalog "F" of 64 pages, beautifully illustrated and fully indexed, has been prepared to answer all faucet questions that arise with contractors, owners, architects, property managers and others concerned with the sanitary equipment of homes and buildings. Included are lavatory faucets of all kinds, bath and shower fixtures, sink and laundry faucets, stops, tank fillers, valves and drinking fixtures.—THE CHICAGO FAUCET CO., 2700 N. Crawford Ave., Chicago.

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(March, 1938)

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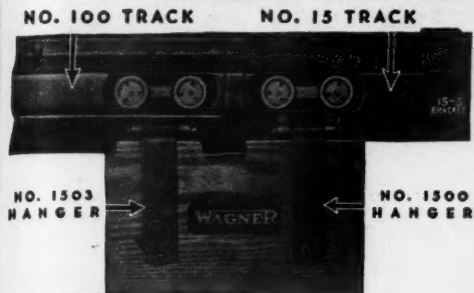
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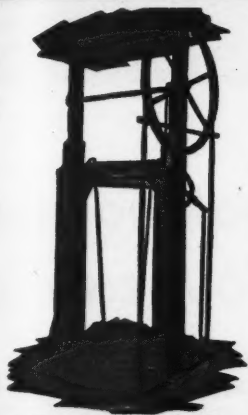
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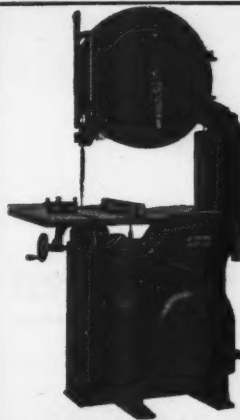
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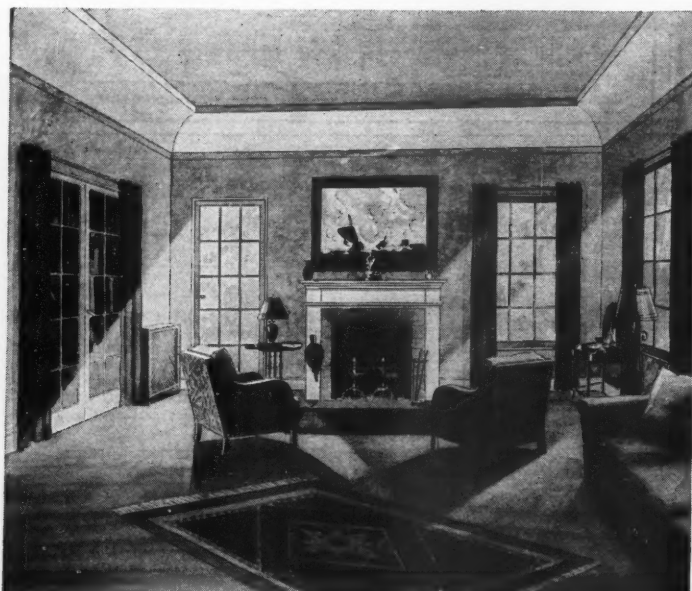


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*The steel idea helped me  
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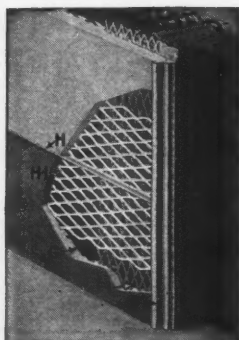
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F-15

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NOTICE TO ADVERTISERS—Forms for the April number of the American Builder and Building Age will close promptly on March 15. New copy changes, order for omissions of advertisements must reach our business office, 105 West Adams St., Chicago, not later than the above date. If new copy is not received by the 20th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts. AMERICAN BUILDER AND BUILDING AGE.



**"There's something that helps  
sell these houses!"**

**THIS HOME EQUIPPED  
WITH BUILT-IN  
TELEPHONE CONDUIT**

**BUILT-IN** telephone conduit (a simple pipe) is a feature that may help close the sale. For it means that telephone wiring can be installed now or in the future — without piercing walls or floors, without showing exposed wire runs.

Call your telephone company's "Builders' Service" for suggestions.



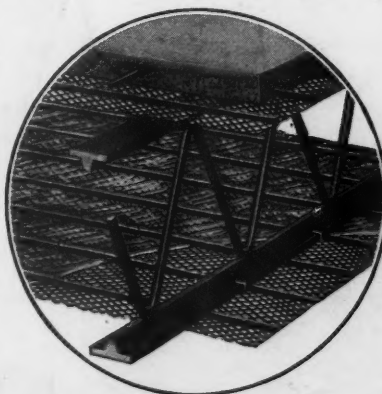
# Multiply Savings

## With TRUSCON OPEN TRUSS STEEL JOISTS

● Savings start with ease and speed of installation. As soon as Truscon Steel Joists are bridged, a working platform is available for immediate use of allied trades. *More savings* because fewer delays. Pipe and conduit can run in any direction through the open webs of Truscon Steel Joists. *More savings* through economical plumbing, heating and electrical layouts. ● Multiply these savings and add light weight, maximum strength and fire-safety and Truscon Open Truss

Truscon Open Truss Steel Joists are available in sizes to meet all span conditions up to and including 32 feet. Complete loading tables are listed in Catalog E-80. Write for it.

Steel Joists actually *cost less* while providing *more* structural advantages. ● See pages 70 to 78 of Truscon's 80-page Catalog (Section 15/22) in "Sweet's" or write for separately bound Catalog No. E-80 for complete details.



TRUSCON OPEN-TRUSS AND NAILER STEEL JOISTS



### TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

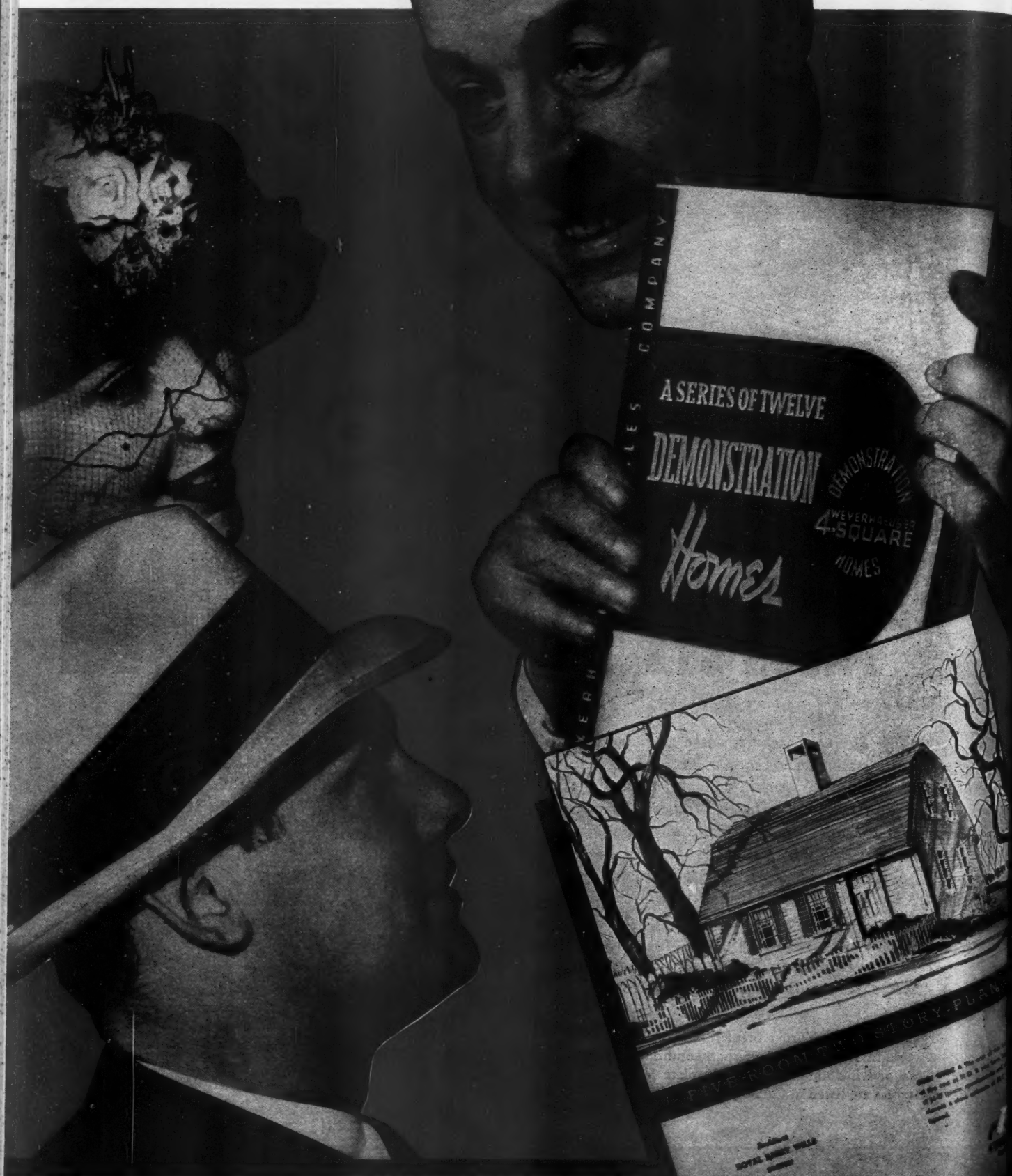
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**4-SQUARE DEMONSTRATION HOMES**  
give home builders the greatest  
home value of the age...

This is one of the 4-Square Demonstration Homes, No. 52-C, five rooms.

THE MOST COMPLETE, MOST PRACTICAL

# House Building Service ever developed

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● 4-Square Demonstration Homes represent a complete house building service. They make good homes easier to sell and give owners better values for their building dollars.

Competent, organized planning by architects of nationwide prominence has been *co-ordinated* with the labor, waste and money-saving features of modern lumber. This *standardization* makes houses more economical to build and less costly to maintain.

4-Square Demonstration Homes make that

co-ordination and standardization practical. They provide a pattern from which houses of any size can be built soundly and at a saving. In small houses they illustrate how many modern conveniences can be incorporated economically.

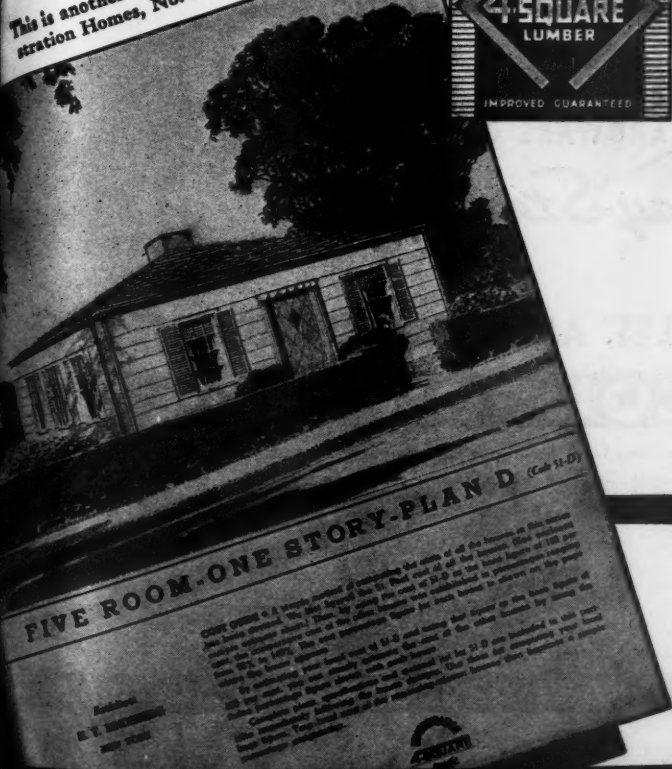
One look at 4-Square Demonstration Homes has already sold many house jobs for builders who work with 4-Square Dealers. And one look at them often makes *future* home builders *immediate* prospects!

4-Square Demonstration Homes are typical of the practical and complete building services that Weyerhaeuser makes available to builders through 4-Square Lumber Dealers. In addition, these builders enjoy the benefits of building with modern 4-Square Lumber — a complete line of lumber products, constantly being improved and increased, for every house building purpose.

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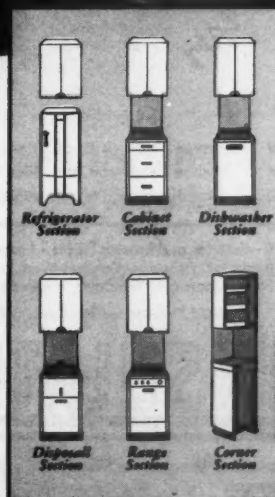
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**B**UILDERS AND ARCHITECTS, realtors and apartment owners are impressed with the rental and sales appeal of General Electric Kitchens. In Cleveland, for instance, the installation of one General Electric Kitchen leads an apartment owner to install 34. A Cleveland builder installed five G-E Kitchens in homes and now plans 40 more houses similarly equipped. In Boston a home builder orders 28 G-E Kitchens while in Detroit an apartment manager installs 24 and a builder orders 20. A realtor in Philadelphia orders 19...and an apartment owner in Los Angeles remodels with 12...an architect in Chicago specifies 30...a Miami builder installs 10. So it goes! General Electric Kitchens have instant appeal to apartment seeker and home buyer alike. Let us send complete details. Address General Electric Company, Specialty Appliance Division, Sec. CW-4, Nela Park, Cleveland, O.

**GENERAL ELECTRIC**

*All-Electric Kitchens*

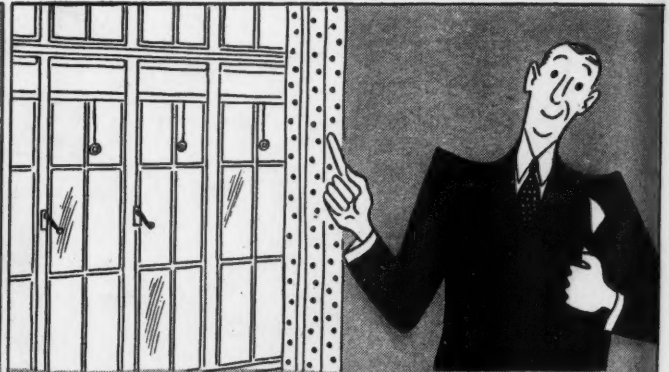




WHEN YOUR CUSTOMERS  
WANT CASEMENT WINDOWS  
YOU'LL FIND THERE'S NO  
CASEMENT LIKE THE  
**SILENTITE!**



"Everybody likes casement windows, I've found. In fact, some people prefer them. But the record of old-fashioned, fuel-wasting casements sets up a hazard to comfort, pocketbook and appearance that makes buyers wary."

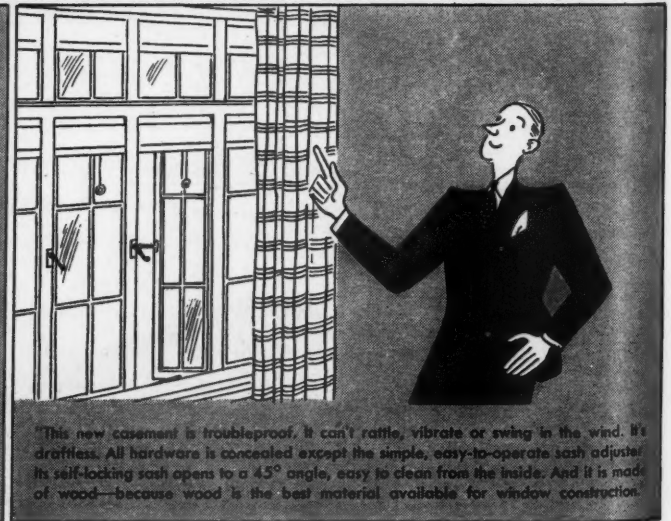


"But now, casements have come into their own. Now there is a cure for heat leaking, for drafts, for beauty-marring rust on exposed hardware—and for swinging, banging casements, too. For Curtis has developed an entirely new idea in casement windows: the Silentite Casement, younger brother to the famous Silentite Double-Hung 'Insulated' Window."

**TEST RESULTS—AIR LEAKAGE**

Casement Tested	Cu. Ft. per Hr. Total for Entire Unit	Cu. Ft. per Hr. per Ft. Sash Perimeter
1. Silentite Casement—Weather-stripped .....	316.2	15.97
2. Competitive Wood Casement—Weather-stripped .....	411.0	22.10
3. Steel Casement—Heavy Section Not Weather-stripped .....	727.2	42.8
4. Steel Casement—Light Section Not Weather-stripped .....	1128.0	62.88
5. Average of above two steel Casements, with storm sash, providing added air seal ..	572.4	32.26

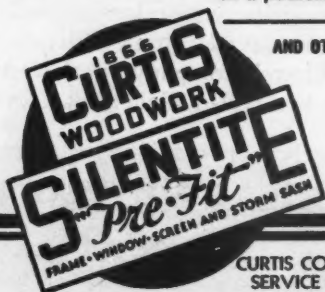
"The new Silentite Casement is also insulated. Tests by Pittsburgh Testing Laboratory on it and other casement units of both wood and metal show that Silentite leaks less air and allows less heat loss than any other! And it will save as much as 17 out of every 100 fuel dollars!"



"This new casement is troubleproof. It can't rattle, vibrate or swing in the wind. It's draftless. All hardware is concealed except the simple, easy-to-operate sash adjuster. Its self-locking sash opens to a 45° angle, easy to clean from the inside. And it is made of wood—because wood is the best material available for window construction."

Builders, architects, dealers and owners all say that the Silentite Casement answers every casement requirement. They aren't hesitating to recommend it on a pocketbook basis because it

saves so much heat in winter, makes houses more comfortable in summer. Let us send you complete details on the new Silentite Casement, on Silentite Double-Hung Windows and on other Curtis products.



AND OTHER CURTIS PRODUCTS—Exterior and Interior Doors • Frames • Trim • Entrances • Molding • Panel Work  
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Storm Doors and Windows • Garage Doors • Miterite Door and Window Trim.

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THE "INSULATED" CASEMENT WINDOW

CURTIS COMPANIES  
SERVICE BUREAU  
Dept. AB-4-C,  
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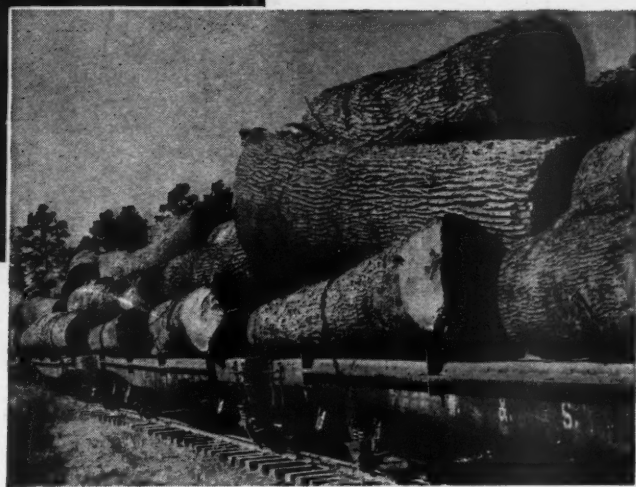
- ☐ Please send literature on Silentite Casement.  
☐ On Silentite Double-Hung Window.  
☐ And on other Curtis Woodwork.

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City ..... State .....

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*for Homes that  
Mellow with Age*



Always surviving the come and go of stylist fads, the matchless warmth of wood continues the supreme favorite for livable homes that endure.

So it is that the sovereign dignity of Oak, decorative beauty of Red Gum, rich tones of Beech, now more fully appreciated, and adaptability of other woods to furniture embellishment fulfill Nature's purpose in contributing to living comfort.

In converting its far-flung forests to these uses, Bradley directs its manufacture from the user's viewpoint, meaning that Bradley's cutting seeks the

best the log affords . . . in flower and figure in Oak and Gum trim and mouldings; in choice strips for "BRADLEY BRAND" Oak Flooring and Oak plank flooring; in matched color for uniform Beech floors; in stair treads and risers which complement Oak floors; in glued-up stock for mirror-smooth panels.

This method of working back from the customer's angle, rather than forward from the log, serves the users of "BRADLEY BRAND" products with the best in merchandising, the benefits of which are mutual . . . to the buyer in delivering what he wants . . . to Bradley in attendant closer utilization of the log.

*"Bradley Brand" Hardwood products are available through retail dealers throughout the United States.*

## BRADLEY LUMBER SALES CO.

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## SIDING GOES MODERN AT LAST—IN PLYWOOD

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### ★ *Harborside* THE SUPER-HARBORD SIDING

**INSTALLED COST IS LOWER**—because HARBORSIDE is double-rabbeted at sides and ends, lays up faster, covers wider surface, saves in nails and nailing time. Painters can follow carpenters because HARBORSIDE is dry packaged, ready to paint.

**WIDTHS AND LENGTHS FOR ALL PURPOSES**—four-foot lengths exposing 12½, 15, 18 and 23 inches, grain vertical; eight-foot lengths exposing 15 and 23 inches, grain horizontal.

**REDWOOD AVAILABLE FOR THE FIRST TIME**—in all siding widths, in addition to the standard fir facing.

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★ Specify HARBORSIDE, as manufactured by the exclusive patented process, using a cresol-formaldehyde synthetic resin binder, hot-pressed and tempered. For complete details and suggestions on applying HARBORSIDE, write for Bulletin No. 7.

MADE OF GENUINE SUPER-HARBORD



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Double Rabbeted Sides and Ends



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Made of SUPER-Harbord The Outdoor Plywood

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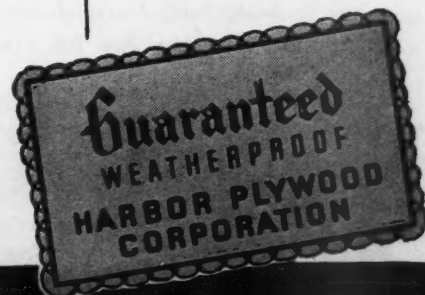
Harbord Plywood  
Harbord Sheathing  
Harbord Wallboard  
Harbord Plycrete  
(For Concrete Forms)  
Harbord Industrial Plywood  
Harbord Luan Plywood

### SUPER-HARBORD Products

Super-Harbord Plywood  
(In All Grades—in Panels as large as 8x16 feet)  
Super-Harbord Plycrete  
(For Concrete Forms)  
Super-Harbord Luan Plywood  
Super-Harbord Redwood Plywood  
Harborside

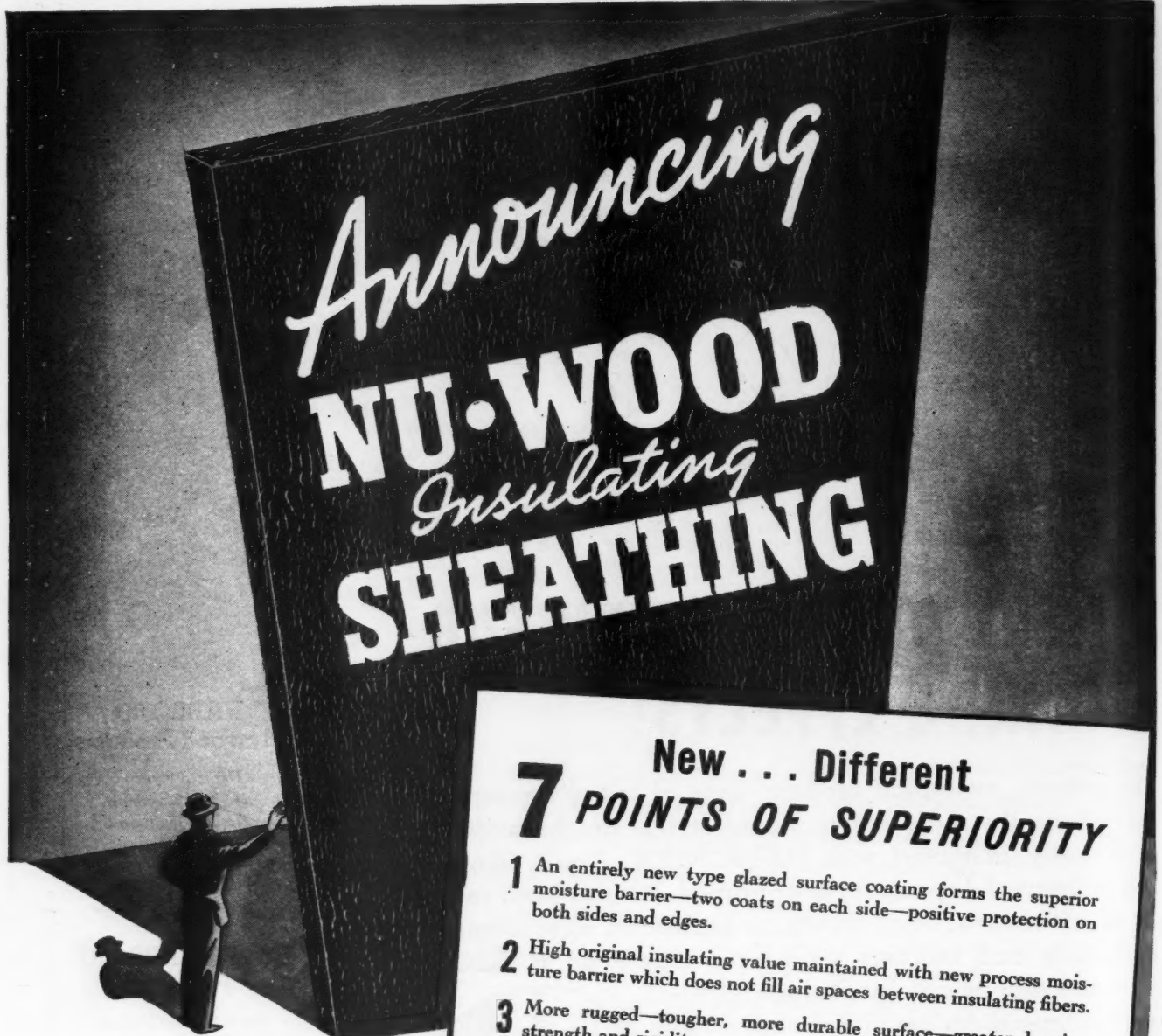
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(With Cotter-Keyed Joint)



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- 6 High melt point coating does not stick—does not foul or clog tools.
- 7 Appearance that sells its own superiority—performance that backs up its appearance.

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*Sold by leading distributors of mine, mill, hardware and contractors' supplies*

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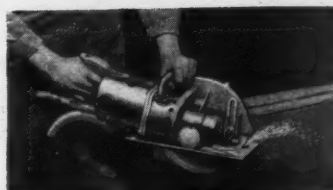
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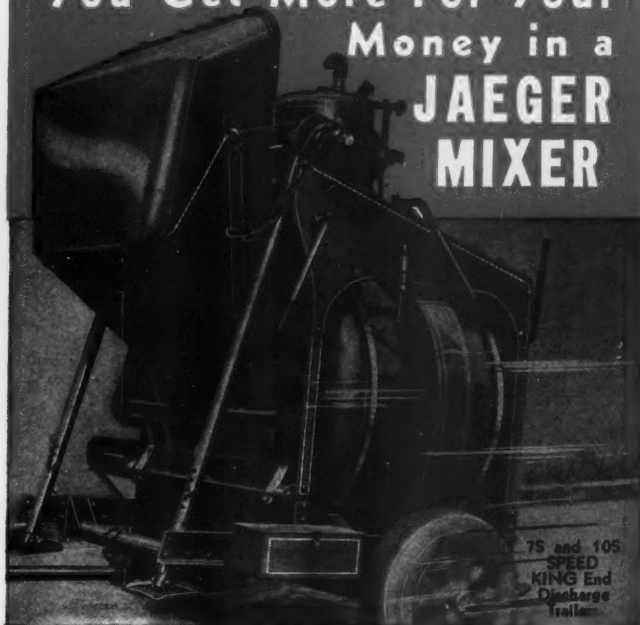
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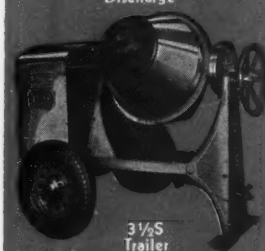


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per Hour, per Day,  
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Any way you look at it, Jaeger patented features of faster Skip Shaker Loader, Criss-Cross "Re-" Mixing Action and Forced Discharge, plus Jaeger built-in ruggedness, get you to the job quicker, turn out the batches faster, give you highest quality of concrete, and keep on doing it, year after year, for the lowest known cost.

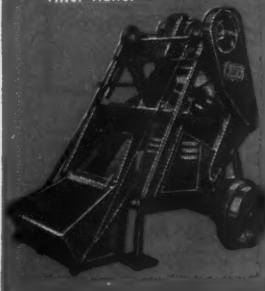


75, 105, 145 Side  
Discharge



3 1/2 S  
Trailer

55 End Discharge  
Tilter Trailer



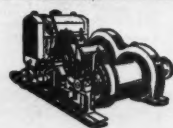
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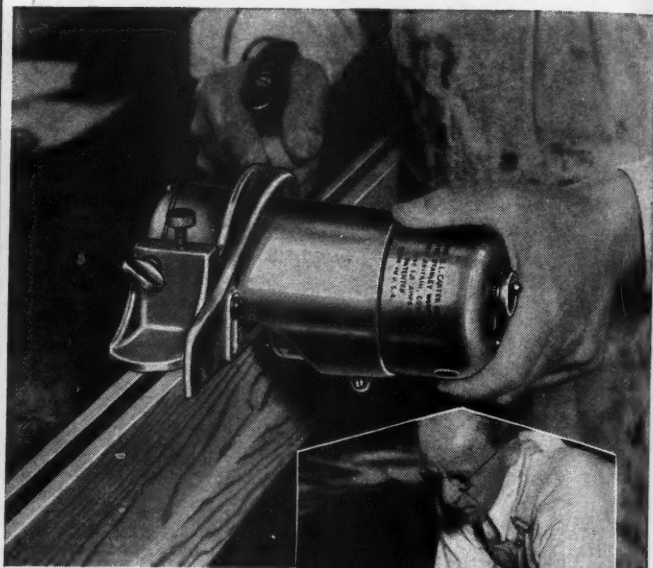


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The Stanley Works  
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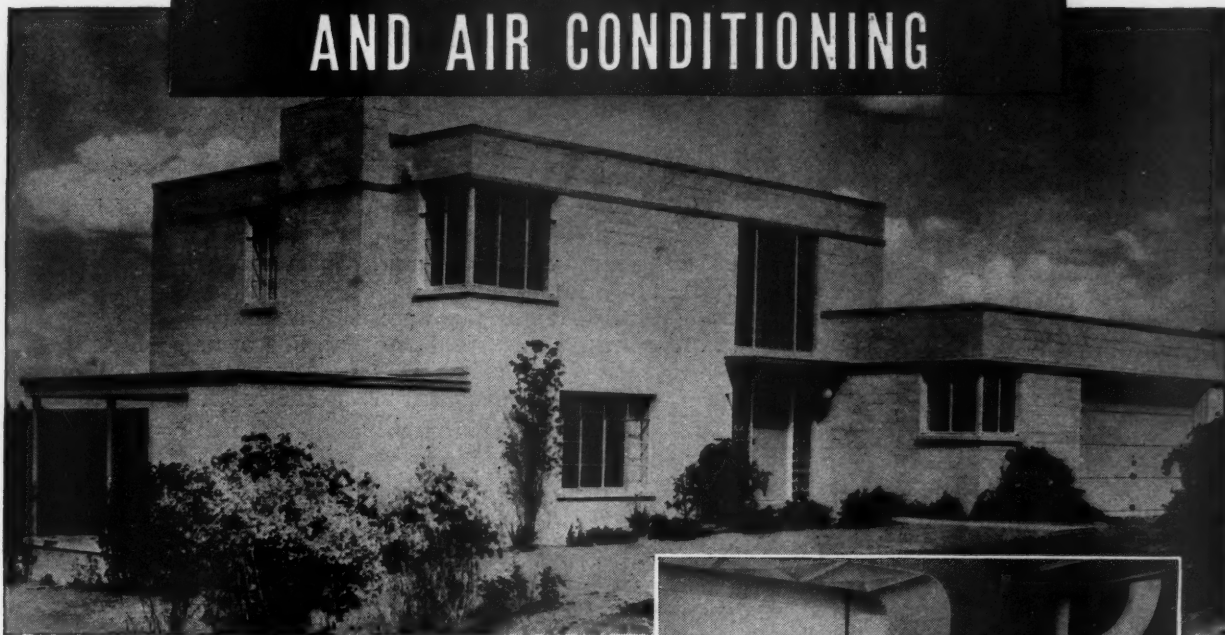
Name.....

Address.....

**CARTER MONEY MAKING TOOLS**

# 'Model Homes' Display the Modern Trend Towards

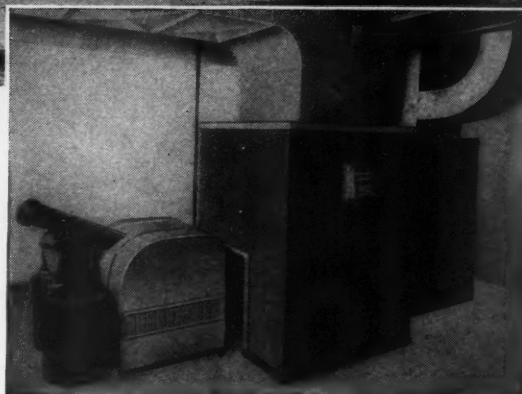
## AUTOMATIC ANTHRACITE HEAT AND AIR CONDITIONING



**T**HE fast-growing interest in the many advantages of Automatic Anthracite Heat and air conditioning is evidenced by the increasing number of Anthracite-equipped "model homes."

The complete heating and air conditioning unit is quiet and safe. Heat is supplied by the smokeless, odorless modern fuel—Anthracite. Filtered, humidified air is circulated in winter and fresh air in summer. Fuel is fed from a closed bin, ashes removed to sealed containers—both automatically. Year 'round hot water supply is an integral part of the unit. The annual fuel cost is considerably lower than with any other type of automatic heat.

Would you like to know more about the developments in modern Anthracite Equipment? A new book, "Automatic Anthracite Equipment," will be sent free on request. **ANTHRACITE INDUSTRIES, INC.**  
Chrysler Building, New York, N. Y.



"HOME OF TODAY," UTICA, N. Y.

Architect—Charles Greenridge

The compact central heating plant, which uses Anthracite, includes an automatic stoker, air conditioning unit, and hot water supply system.



*This Seal of Approval appears on Anthracite Equipment only after it has passed the most rigid tests in the heating field.*

*Pennsylvania*  
**ANTHRACITE**  
COAL



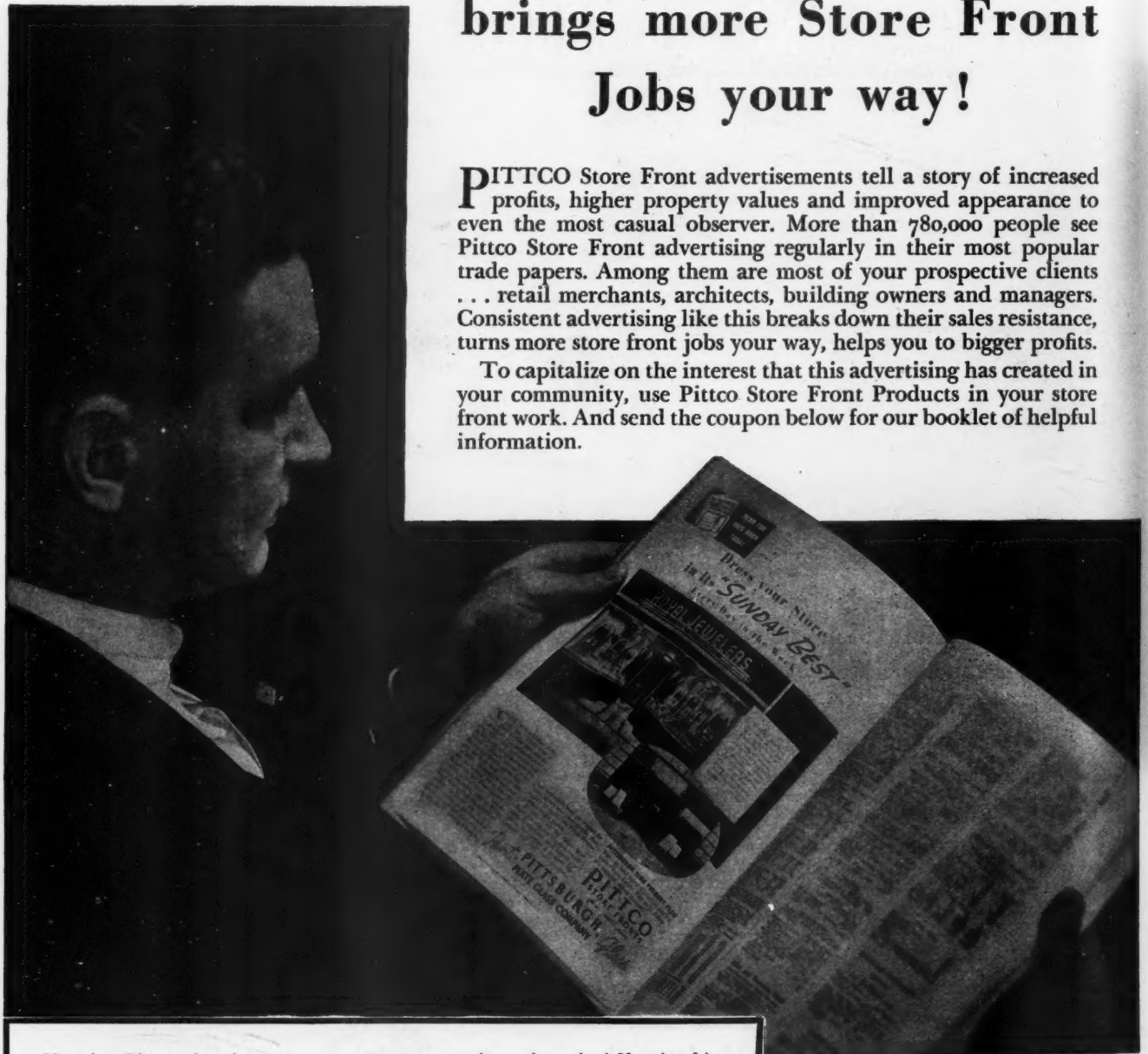
# This Story of PROFITS

... TOLD AT A GLANCE

brings more Store Front  
Jobs your way!

**P**ITTCO Store Front advertisements tell a story of increased profits, higher property values and improved appearance to even the most casual observer. More than 780,000 people see Pittco Store Front advertising regularly in their most popular trade papers. Among them are most of your prospective clients . . . retail merchants, architects, building owners and managers. Consistent advertising like this breaks down their sales resistance, turns more store front jobs your way, helps you to bigger profits.

To capitalize on the interest that this advertising has created in your community, use Pittco Store Front Products in your store front work. And send the coupon below for our booklet of helpful information.



Here is a Pittco advertisement as your prospect sees it . . . in action! Showing him the profit possibilities that Pittco modernization holds. Paving the way for more store front jobs for you.

**PITTCO**  
STORE FRONTS  
*glass...metal...paint*

*Paint* • **PITTSBURGH** • *Glass*  
**PLATE GLASS COMPANY**

Makers of WALLHIDE PAINT • WATERSPAR ENAMEL AND VARNISH • SUN-PROOF PAINT • FLORHIDE • POLISHED PLATE GLASS • MIRRORS • PENNVERNON WINDOW GLASS • DUPLATE SAFETY GLASS • PITTCO STORE FRONT METAL •  
Distributors of PC GLASS BLOCKS and CARRARA STRUCTURAL GLASS

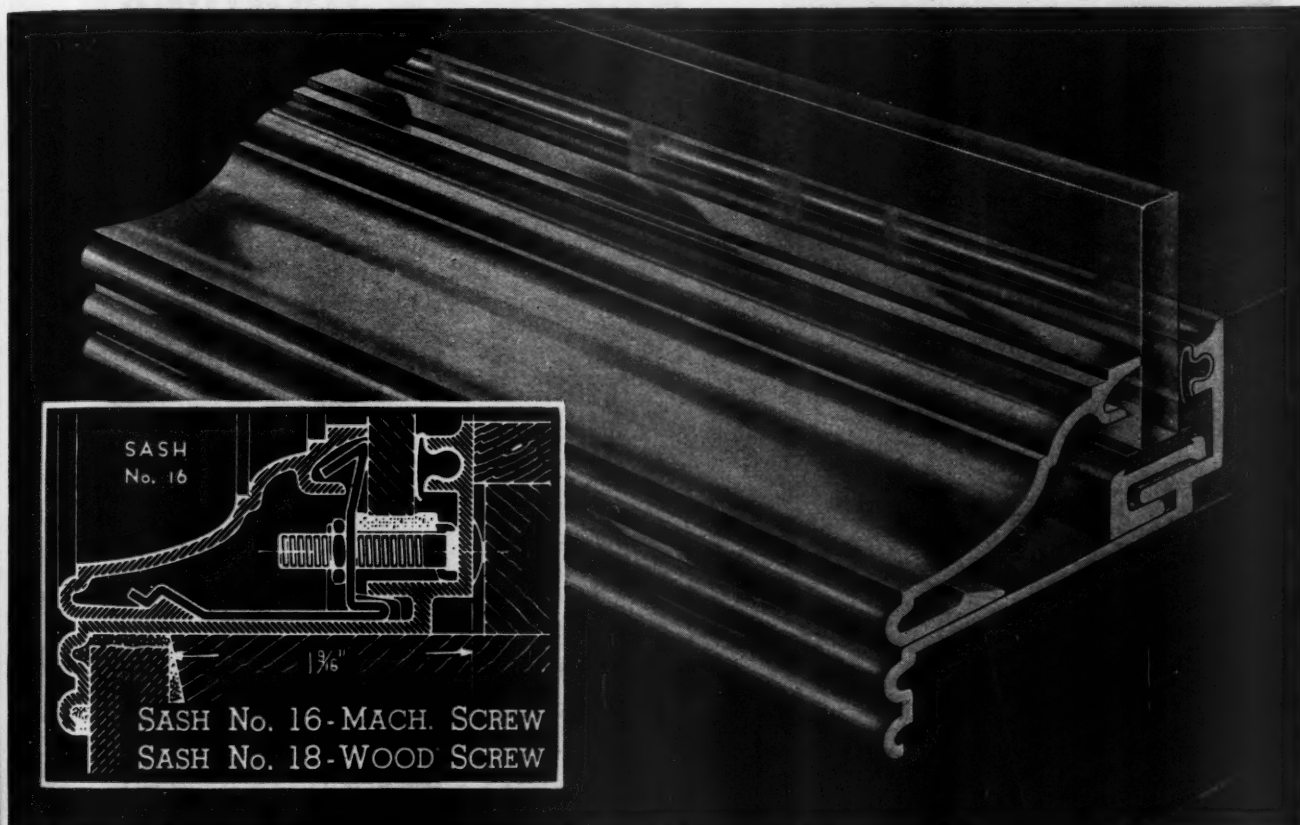
Pittsburgh Plate Glass Company,  
2257A Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your new book entitled "Producing Bigger Profits with Pittco Store Fronts."

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

# Here's a New PITTCO METAL SASH

which broadens the possibilities  
for building effective Store Fronts



THIS new member of the Pittco Metal family presents a variation of the well-known No. 10 Pittco Sash which the contractor will find extremely useful in building store fronts of beauty and effectiveness.

As illustrated, the new Pittco Sash includes a beaded face member which overlaps the facing material used on the front. This results in two desirable advantages. First, it increases the attractiveness and display

value of the show window... because the double bead of the new face member combines with the bead on the sash unit itself to form a wide, effective frame for the show window, setting off the merchandise displayed in a pleasing manner. And second, it adds to the durability and continued good looks of the front by protecting, with its overlap, the edges of the facing material.

You will find this new Pittco Sash

a worthy addition to the present line of Pittco Metal units, which has won the enthusiastic approval of contractors throughout the country. We invite you to send the coupon for complete information and detail drawings of various applications of Pittco Store Front Metal.

**PITTCO**  
STORE FRONT METAL

*Paint* • **PITTSBURGH** • *Glass*  
**PLATE GLASS COMPANY**

Makers of WALLHIDE PAINT • WATERSPAR ENAMEL AND VARNISH • SUN-PROOF PAINT • FLORHIDE • POLISHED PLATE GLASS • MIRRORS • PENNVERNON WINDOW GLASS • DUPLATE SAFETY GLASS • PITTCO STORE FRONT METAL • Distributors of PC GLASS BLOCKS and CARRARA STRUCTURAL GLASS

Pittsburgh Plate Glass Company,  
2210A Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your folder containing full information on Pittco Store Front Metal and detail drawings.

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

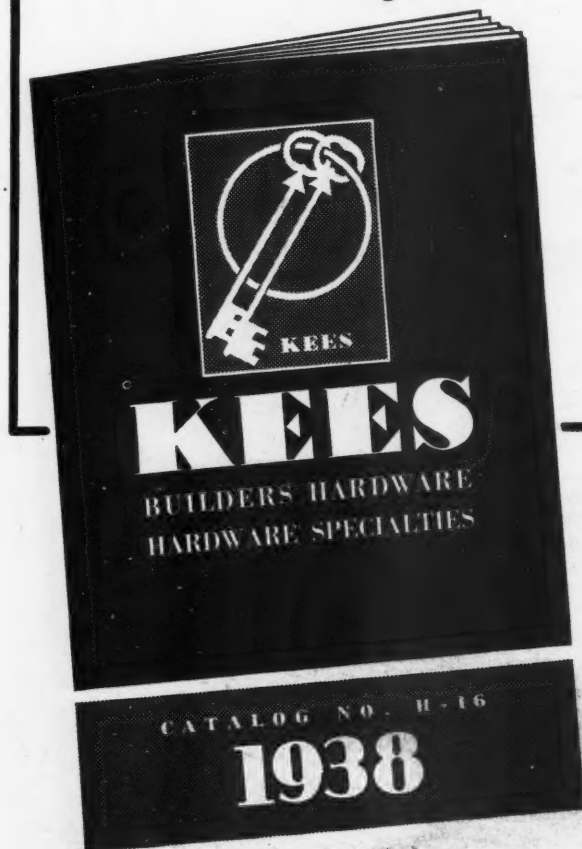
State \_\_\_\_\_



# Send for this NEW

# KEES

## BUILDERS HARDWARE CATALOG



● Here's a sure way to hedge against rising building costs. Send for this new 1938 Kees Catalog of Builders Hardware and Hardware Specialties. See how you can eliminate many needless operations, give a better job, yet save both labor and material expense.

After all, it's the dozens of little things that run into big money in building. For example, with Kees Metal Siding Corners for all types of siding, you can save plenty time and labor. There's no need to saw siding to exact length . . . no mitering

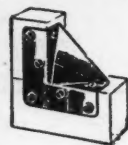
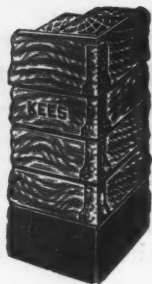
. . . yet corners look twice as neat and they're twice as strong, too.

And when you're making screens and storm sash, you'll appreciate the easy application of Kees Gossett Hangers, as well as their special features which make this the easiest, quickest way to put up or take down screens and storm windows.

There are other Kees items you'll want to know about, too. So send for this new book now. Then keep it handy always for immediate reference. Your copy is Free for the asking.

### KEES METAL SIDING CORNERS SAVE PLENTY TIME and MONEY!

Leading contractors and builders everywhere are using more Kees Metal Siding Corners now than ever before. Easily, and quickly applied to all kinds of drop or lap siding, including Colonial. They give neater, stronger corners—save mitering, sawing siding to exact length, and eliminate corner strips. Special Kees finish takes paint like wood. Free samples will be sent to reliable builders.



### KEES CORNER BRACES

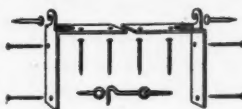
Quickest, easiest way to make screens and other light frames strong and true. No mortising or mitering. Keep out moisture and dirt.



### KEES GOSSETT SCREEN AND STORM SASH HANGERS

Here's the quickest, easiest way to put up or take down screen or storm sash . . . from inside the home or out. No fuss. No trouble. Thanks to the Kees special flange which guides sash right into place. Sash always remains perfectly secure, yet may be swung out for ventilation, to brush out flies, etc. One set of hooks attached to building serve for both screen and storm sash. An extra set of eyes is all you need.

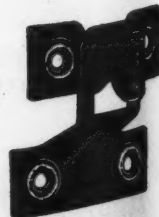
### KEES HALF-SCREEN HANGERS



Several patterns that save time in attaching half-length window screens. Quick, easy to apply. Inexpensive.

### KEES OFF-SET HANGERS

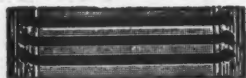
Use Kees Off-Set Hangers where screen frame is not as thick as the casing, and where you have little head-room.



### KEES SCREEN DOOR GUARDS

Kees Screen Door Guards that protect the wire cloth, keep it from sagging, brace and reinforce the door frame and keep it clean.

Other items: Kees Adjustable Chimney Thimbles, Wall Plugs and Ties, Roofing Cleats, etc.



## F. D. KEES MFG. CO.

Box 193

(Est. 1874)

Beatrice, Nebraska

Distributed Thru Wholesale Hardware Trade

# "MAKES A BETTER JOB"

... BECAUSE IT'S "MADE  
TO ORDER" FOR THE JOB



By consulting the builder, architect, engineer and brick layer, we learned what good Masonry Cement should do on the job. These qualities, necessary for better work, were built in (chemically combined) in making MARQUETTE Masonry Cement. Made to order of the man who buys and uses masonry cement—it passes all specifications. It makes a better job.

# MARQUETTE MASONRY CEMENT

**High Test!**

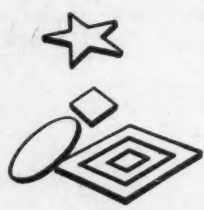
**Marquette  
CEMENT**

Spreads slick and smooth →  
that lays more brick, stops waste of mortar  
and time and cuts cost. A perfect bond  
is made by eliminating shrinkage and  
air pockets in mortar—that makes water-  
tight and permanent joints.

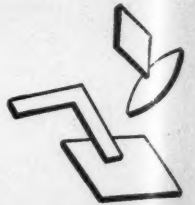
**MARQUETTE  
HIGH EARLY  
STRENGTH  
PORTLAND CEMENT**

**MARQUETTE CEMENT**  
MANUFACTURING COMPANY  
CHICAGO MEMPHIS

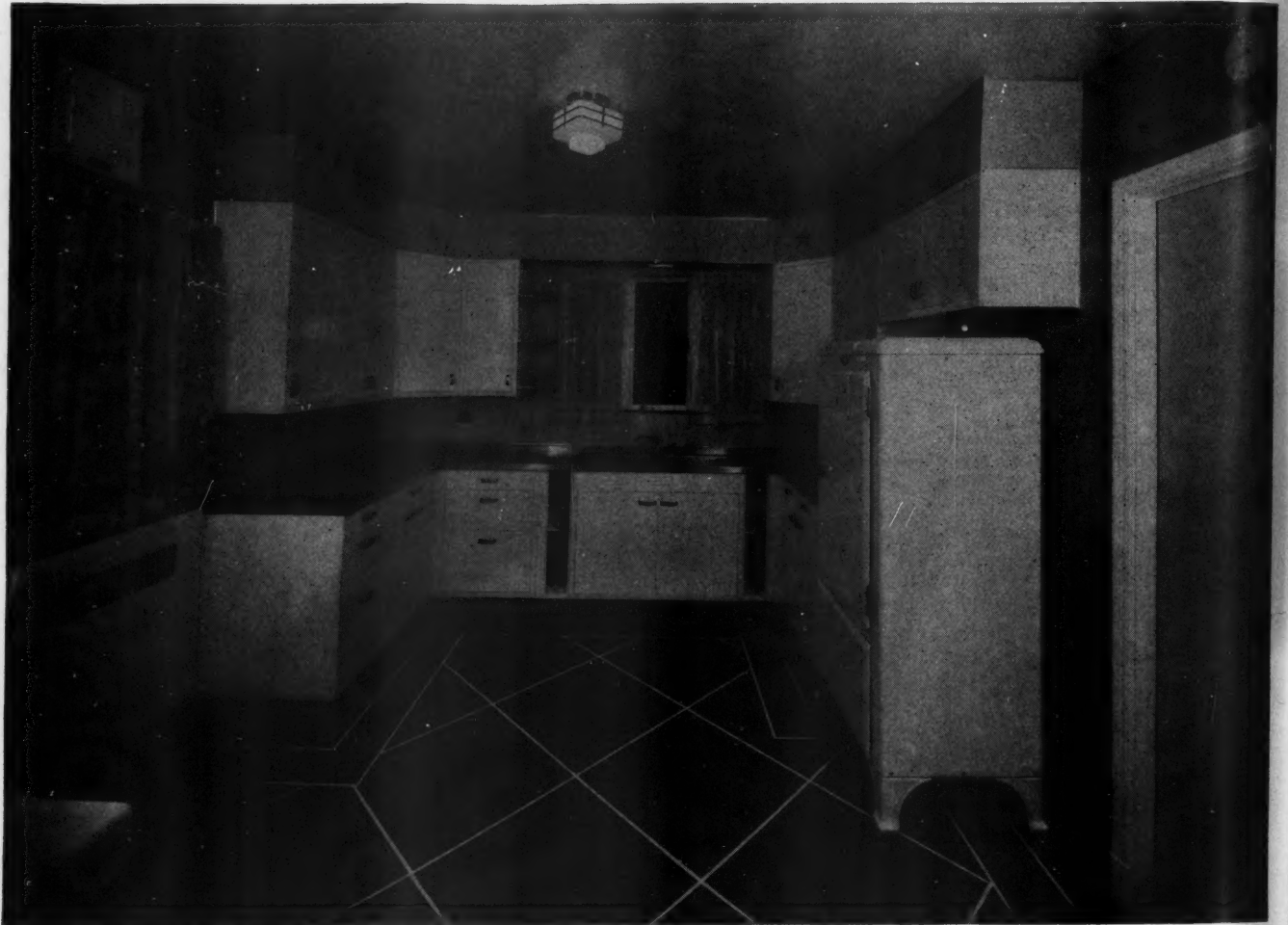




*Unlimited freedom of Design  
... on a limited Budget!*



## **Personal-ized\* Floors and Walls**



*Walls and floors of this kitchen are as modern as the latest automatic oven. They're Personal-ized! Pre-fabricated Sealex Feature Strips and Border set off the dark Sealex Veltone Linoleum. Ready-made Sealex Star Insets add a deft touch to the sanitary, stain-proof Sealex Wall Linoleum.*

**H**OME-BUYERS today want custom-made smartness—at practically ready-made cost. Builders now have the perfect answer to this demand—Personal-ized Floors and Walls of Sealex Linoleum. Practically any design you wish can be carried out with pre-fabricated Sealex Insets, Feature Strips and Borders.

Sealex Linoleum Floors and Sealex Wall Linoleum appeal strongly to prospects on many

other counts, too. Moderate first cost. Freedom from costly refinishing. A perfectly smooth, sanitary surface—delightfully easy to keep spotlessly clean.

Installed by authorized contractors, Sealex Floors and Walls carry a guaranty bond fully covering the investment. Write for full information today!

\*Trademark Registered U. S. Pat. Off.  
Congoleum-Nairn Inc.

CONGOLEUM-NAIRN INC.

KEARNY, N. J.

## **SEALEX LINOLEUM**

TRADEMARK REGISTERED

*Floors and Walls*

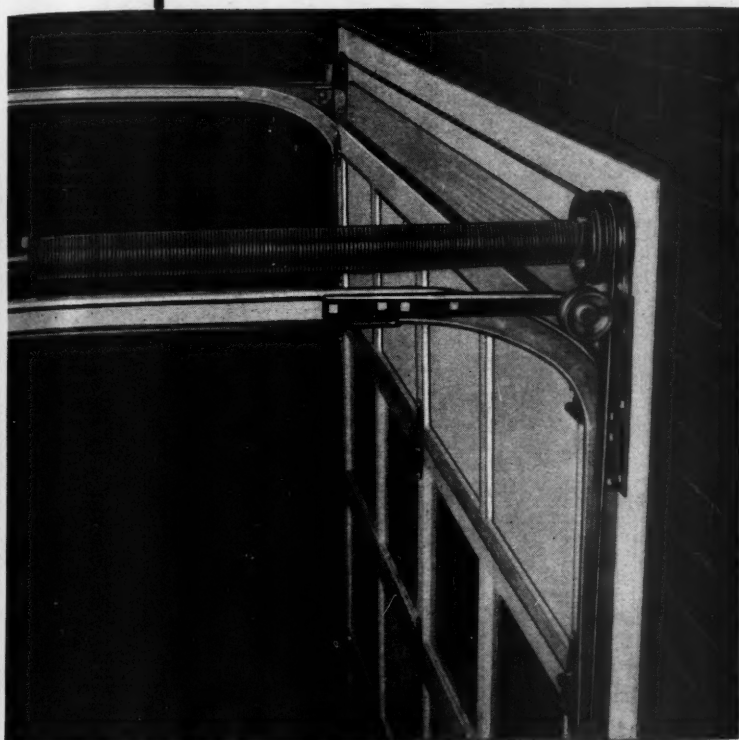
Rea

Only one  
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nicking.

Typical

R

# You **NEVER BEFORE** Saw a Door Operated **LIKE THIS!**



## An Entirely *New* Mechanical Principle Revolutionizes Garage Door Operation

Never before has it been possible to build a door with so few working parts . . . with such convenience and ease of installation . . . with such smooth coasting, non-binding operation . . . with such lasting freedom from service calls. The reason this door is such a sensational improvement over any Garage Door you have ever seen is that it incorporates *for the first time* a new invention, known as . . .

## Rō-Tō Live Spring

Here is the remarkable feature of this simple double-powered, self-equalizing lifting mechanism. Every inch of the Ro-To Spring is a *live* lifting force. It has no "dead end," such as all other Garage Door springs have.

### BOTH ENDS WORK

—at exactly the *same time*, with exactly the *same power*, and exactly the *same efficiency*. That's why when you open or close this new Ro-Way Model "J" Door, you get the sensation of "*coasting*." The Ro-To Live Spring puts a straight *balanced lift* on both sides of the door, ending all side-drift which causes other doors to bind.

### Already Field-Proven in 3,000 Garages

The Ro-Way Model "J" Door has been given factory tests that equal more than 150 years of ordinary service. But that is not all. For nearly a year, this Model "J" Door with Ro-To Live Spring has been *made* . . . but never advertised. We have, during the past 12 months, placed 3,000 of them where they would be given the severest test in the hands of actual owners. The result of this nation-wide field test has been so convincing, so enthusiastic, so sweeping that we believe, when you get the facts, no matter what make of Garage Doors you have been using, you will want to insist on Ro-Way Overhead Type Doors for your future residential Garage Door requirements.

Write today. Address

**ROWE MFG. CO.**  
765 Holton St. Galesburg, Ill., U.S.A.

### Read How It Works—

Only one spring is used in the construction of the Ro-Way Model "J" Door . . . and this is the Patented Ro-To Live Spring, which is placed above one of the horizontal tracks. This spring is *full-floating*. One end of it is attached to the rotating ball bearing shaft which carries the far sheave, or pulley. The other end of the spring is attached to the near sheave, or pulley, as shown in the above illustration. Closing the door immediately starts both ends of the Ro-To Live Spring into operation. One pulley turning one way and the other pulley another way results in double-quick coiling of the spring, and double storage of lifting power. Now, when the door is opened, immediately this stored double power is transmitted, smoothly, evenly, quietly to both sides of the door in a powerful, *balanced lift*, which is always absolutely vertical . . . always free from side drift, binding and sticking.



Typical installation of Ro-Way Model "J" Residence Garage Door

### Ro-Way Model "J" Door for Residential Garages offers many other advantages

—such as "tracks attached directly to door jamb" . . . "no off-set brackets" . . . "lower headroom requirement" . . . only 3 3/4" sideroom requirement" . . . "impossible to jump track" . . . and many others.

Other models are available for all sizes . . . all buildings . . . electrically operated if desired.

# Rō-WAY "J" OVERHEAD DOOR

—type—



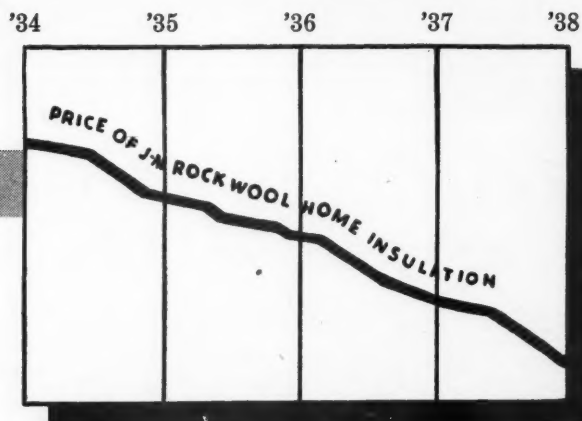
# Did you know that you can insulate with Ful-Thik J-M ROCK WOOL BATTS for **30%** LESS than in 1934?

Why not use this famous insulation since now it costs no more than many less effective materials?

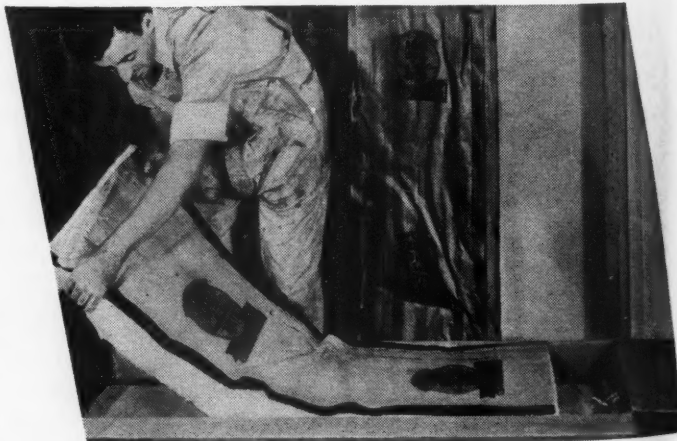
THE modern Johns-Manville Rock Wool Home Insulation Batt is a better product, gives greater value, than ever before...yet today it sells at the lowest price in years. Improvements in design and manufacturing processes, the introduction of Super Batts, the development of Semi-Thik Batts for sidewalls and the new Junior Batts—these combined with a constantly increasing consumer demand have made this possible.

Today J-M Rock Wool Batts are within the building budget of every home, and today owners are realizing that there is more than one kind of insulation—that a scientific insulation like J-M Rock Wool is one of the soundest investments they can make.

There are no reasons why any home should lack the comfort and protection of J-M Rock Wool. More information about the famous J-M Ful-Thik Batt and the complete J-M line is given on these pages. For all the facts, write Johns-Manville, 22 E. 40th St., New York City.



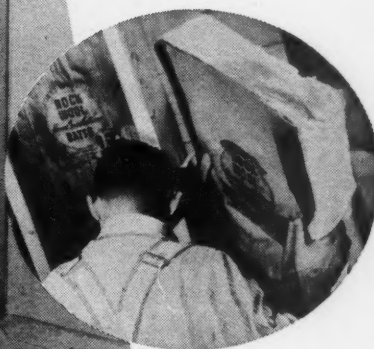
**1 LOW COST**—The 1938 J-M Ful-Thik Rock Wool Batt is a far better product than a few years ago, yet the price has gone steadily downward. And improvements in design have brought lower application costs. Today J-M Batts are no more costly than many less effective insulations.



**2 A BETTER PRODUCT**—Two 48" J-M Super Batts reach from floor to ceiling (23" size is convenient for overhead work). Every J-M Rock Wool Batt is of uniform thickness and correct density for efficient insulation. J-M Rock Wool Batts won't settle.



**3 HANDLE EASILY**—The heavy waterproof backing makes J-M Rock Wool Batts convenient to apply without destroying size and shape. In addition, it protects against wet plaster. This is a distinct improvement over the original batts. The tacking flange is particularly useful on overhead work . . . insures tight application.



**4 J-M SEMI-THICK BATTS** give protection at moderate cost. Especially recommended for sidewalls, where they are easily held in place with the convenient tacking flange. Made of exactly the same material as J-M Full-Thick Batts . . . offer high resistance to the passage of heat.



**5 NEW J-M JUNIOR BATTS** for use where first cost is an important factor. They add comfort and value to any house at small extra expense, fit snugly, handle easily, insure uniform thickness and density.



#### **BUILDERS AND DEVELOPERS—THIS PLAQUE HELPS SELL HOUSES**

Today quality builders everywhere who know the selling value of nationally known products are displaying this attractive framed plaque which J-M furnishes free. If you use J-M Rock Wool in *your* houses, ask your J-M representative or dealer for a plaque for each one. It is supplied with the address of the house in which it is to be displayed. It is a silent salesman for you because it attracts immediate attention and shows that you have used quality products.



# JOHNS-MANVILLE

## BUILDING MATERIALS





## KITCHEN-WISE HOUSE PLANNING

The kitchen-conscious woman of today thinks of her kitchen in terms of convenience, freedom, ease — and she wants to be proud of it.

To meet these needs Westinghouse ELEC-TRI-Center KITCHENS are planned to fit every type of house, from modest to luxurious, and all types of multiple-family units. They are low in cost and easy to install.

Each design is basically sound in plan and application. Storage and work facilities are both complete and flexible.

A distinct advantage is the broad user acceptance created for Westinghouse Kitchen-proved Refrigerators, Ranges, Water Heaters and Dishwashers — all “proved where they’re used, by the women who use them.”

Westinghouse Kitchen Planning Service offers co-operation with architects, builders and owners; no obligation.

### Westinghouse ELEC-TRI-Center KITCHENS

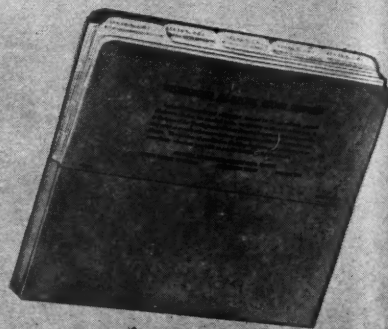
AS SIMPLE AS



Copyright 1938, Westinghouse Elec. & Mfg. Co.

EVERY HOUSE NEEDS  
**Westinghouse**

AND IT ACTUALLY  
COSTS LESS TO INSTALL



from

### KIT to KITCHEN

The Westinghouse 1938 Kitchen Planning File Kit provides scale drawings of 7 kitchen types in 21 basic designs, complete with specifications and supplementary data. Sent free on request.

#### CLIP AND MAIL

Westinghouse Elec. & Mfg. Co.,  
Dept. 8214, Mansfield, Ohio.

Gentlemen:

Without obligation please send Westinghouse Kitchen Planning File Kit for Architects, to:

NAME.....

ADDRESS.....

CITY AND STATE.....

# Nearly 300 houses sold



*Mott Brothers are the architects, builders and owners of this successful development at Garden City, Long Island*

## STUCCO big factor in construction of Mott Brothers Community . . .

● Mott Brothers have built and sold nearly 300 homes in their Garden City, Long Island, development. And more than half of these houses are either partly or entirely finished with Mohawk Stucco, manufactured by C. A. DeLevante, Inc., Rockville Centre, Long Island. Mohawk Stucco is made with Atlas White portland cement.

One big advantage in using *white* portland cement in stucco is that you get exactly the color you want—from pure white, through delicate pastel tints—to warm, rich yellows, browns, greens and other shades.

Stucco made with Atlas White is economical to



*Stucco made with Atlas White portland cement was used in finishing more than half of the homes in this beautiful development. Atlas Gray cement was used for the house foundations and roads.*

apply on old buildings as well as new. Moreover, it is permanent, firesafe, weatherproof. And little or no upkeep is required. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South LaSalle Street, Chicago.

**A FACTORY-PREPARED STUCCO IS PREFERABLE**



S-12

STUCCO MADE WITH **Atlas White** PORTLAND CEMENT



# "No-Risk" Offer Opens Eyes of Nation's Casein Paint Buyers

## DOUBLE YOUR MONEY BACK!



**IF MODEX THE  
POWDER CASEIN PAINT  
DOESN'T SAVE YOU  
25% OVER ANY  
PASTE TYPE**

**Daring "Show Me" Offer  
to Users of Casein Paints!**

If you have not used Modex (the concentrated powder casein paint) you may think this offer is unbelievable, but the cold facts are that Modex costs you at least 25% less than any paste casein paint. We don't ask you to take our word for this statement, we merely ask you to buy a 5-pound package of Modex and use it according to directions. Then take any paste casein paint, cover the same amount of surface and figure your paint cost.

If you do not find that Modex is at least 25% cheaper, send us the invoice and we will mail you a check for twice what you paid for your 5-pound package.

There is nothing mysterious about Modex—in fact, it meets the same Federal Specifications as paste casein paints. The big advantage of Modex is its concentrated powder form—you buy only the essential ingredients and pay neither for water added during manufacture nor for expensive lead-lined containers.

You cannot afford to pass up this offer. If Modex fails to make good on our claims, you get double your money back—when you discover for yourself the 25% saving which Modex brings it means 25% saved on all your casein paint purchases from now on.

**MODEX—The Concentrated Casein Paint**

7 ESSENTIAL QUESTIONS	MODEX POWDER CASEIN PAINT	ANY PASTE CASEIN PAINT
Meets Federal Specifications?	OK	OK
Self-Sizing?	OK	OK
High Light Reflectivity?	OK	OK
Easy to Mix?	OK	NG
Contains Only Active Ingredients?	OK	*NG
Inexpensively Packaged?	OK	NG
Spoilage-proof?	OK	NG

\*In casein paste paints, user pays for water added by manufacturer.

**New 7-Point Check List Shows  
Why We Can Make This Offer**

Here are the seven questions you want to have answered when you buy casein paint. This side-by-side comparison between Modex, the powder casein paint, and any paste-type tells a convincing story. Test Modex yourself during the "double your money back" offer—you'll keep on buying Modex!

*Send for Illustrated Modex Folder*

**Economy of Buying  
Powder Type is  
Convincingly Proved**

Are you spending more for casein paint than you should? Here's the way to find out without risking a penny. Try a 5 lb. package of Modex, the concentrated powder casein paint in direct competition with any paste-type.

Figure your paint costs and if Modex is not at least 25% cheaper than the paste, send us the invoice from your supplier and we will give you double your money back.

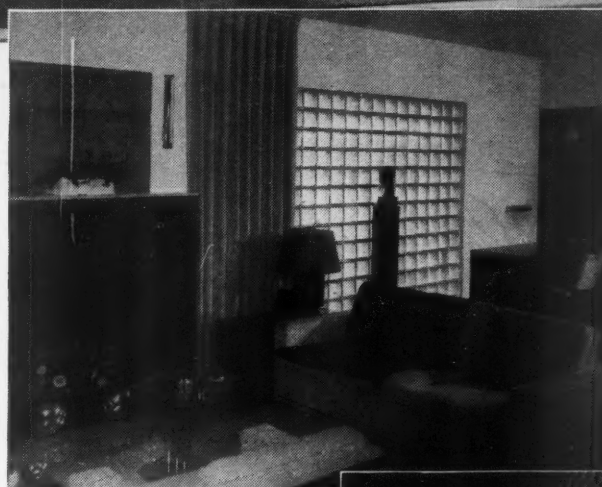
You can't lose. If Modex does not show you how to save 25% on all your casein paint purchases from now on we pay you double.

**THE REARDON CO. • St. Louis • Chicago • Los Angeles • Makers of BONDEX**



OWENS-ILLINOIS  
*Insulux* **GIVES**  
**THE IMAGINATION**  
**NEW FREEDOM...**

● The nation-wide acceptance and approval of Owens-Illinois INSULUX Glass Block are due partly to the inherent superiority of the block itself, partly to its patented and *exclusive* features and partly to the many attractive face patterns in which it is offered. Each INSULUX design is a thing of rare beauty. Each may be used individually or in combination with any one or more of the other patterns. Each provides a different degree of light transmission and diffusion. These characteristics, found only in INSULUX, offer many opportunities for builders to identify the homes they build as up-to-date, distinctive and incorporating the most modern of materials and construction. INSULUX will simplify your *building* and make the results more effective. Complete details in our 24-page catalog in Sweet's Architectural File, Section 4—Catalog 42. The coupon will bring you beautifully illustrated material for your files...Send it today. Owens-Illinois Glass Company...“FIRST IN GLASS”, Toledo, Ohio.



Exterior and interior views of the  
L. D. Allen home, Houston, Texas  
—Wirts and Calhoun, architects.

INSULUX Glass Block manufactured by Owens-Illinois Glass Company. World's largest manufacturers of glass containers and producers of DUST-STOP Replacement-Type Air Filters . . . FIBERGLAS Insulating Wool, Insulating Blankets and Filter Cloth.



OWENS-ILLINOIS *Insulux*  
**GLASS BLOCK**

OWENS-ILLINOIS GLASS COMPANY  
Industrial and Structural Products Division  
303 Madison Avenue, Toledo, Ohio

Please send . . without obligation on my part . . architectural details on INSULUX.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ County \_\_\_\_\_  
State \_\_\_\_\_

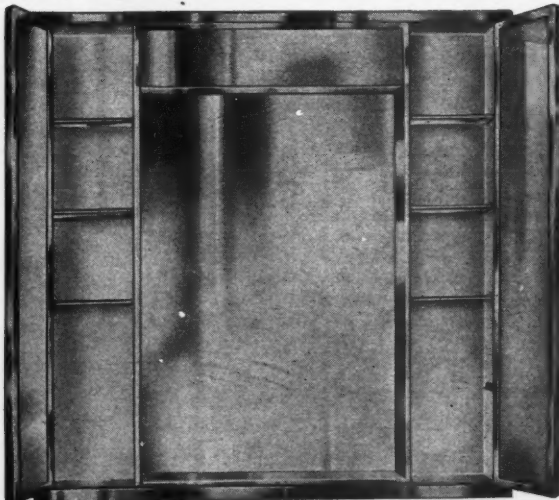


# MIAMI BATHROOM CABINETS AND ACCESSORIES...



*Glorifying* THE  
AMERICAN BATHROOM

In the "IMPERIAL," illustrated below, Miami designers have blended glass and brilliant metal (Chromium) into an exclusive model for those who want the best. Cabinet is wired at factory for indirect lighting.



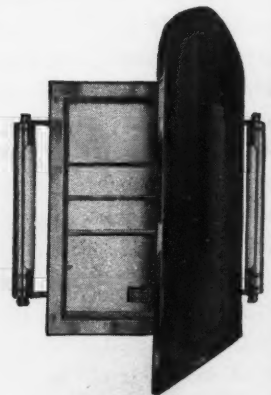
**P**ROFIT from the trend to more beautiful bathrooms... with Miami Cabinets and Accessories you can meet every modern requirement.

The Miami Line includes 130 distinctive models—many exclusive Miami designs—ranging from the very finest that money can buy to cabinets for homes of limited cost. All are famous Miami Quality throughout—ruggedly constructed to provide lifelong beauty and service.

Backed by over 17 years of specialized manufacturing experience, Miami Cabinets today enjoy a nation-wide reputation as "America's Finest." Without obligation, the Miami Catalog will be sent upon request.



The "DUCHESS" (above), is a practical cabinet with beautiful circular mirror set in a brass chromium plated frame. Also made without frame around mirror—the "MODERNE."



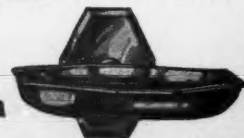
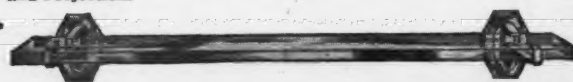
## TOWEL SUPPLY CABINET

For the luxurious bathroom. Heavy air-cushioned door, swung on brass chromium-plated piano hinge, has full "A" quality mirror set in beautiful chromium-plated frame. Five glass shelves furnished. Two sizes.

The above illustration shows Miami Cabinet fitted with Miami's new, distinctive Tubular Light Brackets No. 1. Equipped with adjustable chromium shield to direct light in any direction. For large bathrooms. Other styles and sizes for small and medium-size bathrooms.

## MIAMI CHROMIUM BATHROOM ACCESSORIES

are made to remain beautifully brilliant—always. The complete line includes accessories for every purpose—two types, Recessed and Projection.



MIAMI CABINET DIVISION • The PHILIP CAREY COMPANY, Middletown, Ohio.

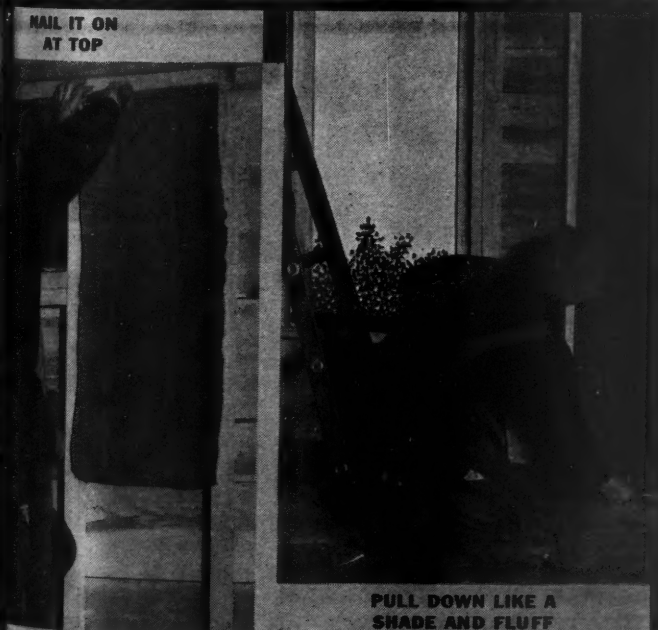
# "EXPANDABILITY"

a NEW, important development  
in Building Insulation



•The important savings in handling, storage, and installation made possible by Kimsul's expandability are not gained by sacrificing efficiency or permanence. For the expandability of a Kimsul blanket is due to felting, creping, and laminating . . . the fibres themselves are not stretched. Thus the air cells spun into them remain unbroken and undistorted under all conditions.

MAIL IT ON  
AT TOP



PULL DOWN LIKE A  
SHADE AND FLUFF

# KIMSUL

REG. U.S. & CAN. PAT. OFF.

*Expanding Blanket*

# INSULATION

Kimsul\* is the modern material designed to cut every insulating cost.

Bulk, for example, affects the costs of shipping, storing, and handling insulation . . . so Kimsul is compressed to a point where 250 square feet of it come packed in a carton only 16" x 20" x 23½" in size and weighing only 37.35 lbs.

Again—measuring, cutting, and fitting insulation on the job involve labor, time, tools, and waste . . . so Kimsul is made in 20" long, expandable blankets of just the right width to tuck snugly between standard studding. At the time of installation, one end of a blanket is nailed to the header (as shown at left), then the free end is pulled down like a roller shade and fastened to the floor plate. This creates a continuous, unbroken 1" thick blanket the full length of the opening . . . which has taken seconds, not minutes, to install.

Anyone interested in building should know about these important economies. Get full information on Kimsul today. Use the coupon.

## See that the insulation you choose meets all these requirements.

- 1 EFFICIENCY:** ("K" factor 0.27) Kimsul is made of wood fibres whose natural high resistance to heat is increased by interweaving, creping, and laminating.
- 2 FLEXIBILITY:** Pliant as cloth, Kimsul can be tucked snugly into odd spaces, around windows, electric wires, etc.
- 3 PERMANENCE:** Processed with asphalt and non-toxic chemicals, Kimsul is highly resistant to fire, vermin and moisture.
- 4 NON-SETTLING:** Kimsul stays put. It will not shred, sift, nor pack down . . . is unaffected by settling of walls, or vibrations.
- 5 LIGHTNESS:** 1,000 square feet of Kimsul weigh only 131.5 pounds.

It adds practically no structural load to a house.

**6 PROPER THICKNESS:** Kimsul's one-inch thickness provides maximum returns in comfort and fuel savings for the money invested.

**7 NO WASTE:** Every square inch can be used. Odd pieces can be employed as caulking.

**8 EASE OF HANDLING AND INSTALLING:** Kimsul is extremely light and is made the right width to fit between studs . . . no cutting or fitting needed.

**9 EXPANDABILITY:** An exclusive Kimsul feature which speeds up work and reduces installation costs.

\*Reg. U.S. & Can. Pat. Off.

KIMBERLY-CLARK CORPORATION (Kimsul Division), Neenah, Wisconsin  
Established 1872  
NEW YORK, 122 East 42nd Street CHICAGO, 8 South Michigan Avenue

ABA

Mail me, without  
obligation, copy of  
booklet describing  
Kimsul, also a full  
sized sample.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



FOR TODAY'S BUILDINGS...

# THERE IS NO MORE *Pleasing Flooring*

## THAN NORTHERN HARD MAPLE

Today, you can use Northern Hard Maple Flooring in any of three ways. Each provides the friendly warmth of wood, plus the permanence of Hard Maple—in a flooring of genuine beauty.

Hard Maple offers the natural beauty of one of Nature's tightest-grained woods—the light-reflecting smoothness which makes Hard Maple the "floor of sunshine," cheery as a June day. It *looks* clean . . . it *is* clean. Maple's pattern never tires the eye . . . Maple stays liveable.

Where special architectural effects are desired, Hard Maple also supplies the answer. It is available "grouped for color tone." In strips or blocks, your customer can choose selected tones of the *natural* wood (selected for "White Clear" or "Brown Clear") and use Hard Maple in a variety of pleasing patterns.

Third, Hard Maple also offers choice of any color scheme—through proven color finishes (transparent or opaque), inexpensive to apply, simple to maintain. These come in Early American, Spanish Brown, Seal Black, Royal Blue, Autumn Brown, and other colors, imparting a glorious richness to Maple's natural beauty which cannot be described. For *any* color on this smooth, tight surface is more beautiful than on other flooring material. Colored samples are available on request.

*Whichever* of these three ways you use Hard Maple Flooring, it offers enduring beauty. And the permanence, lower maintenance and cleaning costs, the satisfaction that have made this flooring a favorite in buildings of all types, are found in *all three*. Use trademarked **MFMA\*** Maple, to insure floors that satisfy.



*Color refinished Northern Hard Maple Floor—over 10 years old*

## Floor with MFMA Maple



### MAPLE FLOORING MANUFACTURERS ASSOCIATION

1781 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/76.

*\*To be sure of Association guaranteed grading, specify and look for the MFMA trademark (indented and stamped). The following manufacturers are licensed to use it:*

Beck, August C. Co., Milwaukee, Wis.  
Brown Dimension Co., Manistique, Mich.  
Bruce, E. L. Company, Memphis, Tenn.  
(Mill at Reed City, Mich.)  
Connor Lumber & Land Co., Laona, Wis.  
(Sales Office, Marshfield, Wis.)  
Farrin Lumber Co., M. B., Cincinnati, O.  
Holt Hardwood Co., Oconto, Wis.  
Kerry & Hanson Flooring Co.,  
Grayling, Mich.  
Kneeland-Bigelow Co., Bay City, Mich.  
Kneeland-McLurg Flooring Co.,  
Phillips, Wis.  
North Branch Flooring Co., Chicago, Ill.  
Oval Wood Dish Corp.,  
Tupper Lake, N. Y.  
Robbins Flooring Co.,  
Rhineland, Wis.  
Stephenson Company, I., Wells, Mich.  
Wells, J. W. Lumber Co.,  
Menominee, Mich.  
Wisconsin Land & Lbr. Co.,  
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White Lake, Wis.

*Shingles that help  
to sell a home...*



**K&M**



## SIDING SHINGLES

The definite architectural appeal of K & M "Century" Siding Shingles steps up the value of a home in a prospective purchaser's eyes. Yet these shingles are not expensive, and they offer many other advantages to builder and home-owner alike. Fire-resisting and weather-resisting because made of asbestos-cement, home buyers know them as a life-time investment.

K & M made the first asbestos-cement shingles produced in this country. The entire K & M line is backed by more than 60 years' experience with asbestos and magnesia products, plus the most rigid quality-control that assures durability, uniformity and lasting satisfaction. The line is complete, and priced right.



### Send for information

Asbestos Roofing and Siding Shingles • Asbestos Flexible Wallboard (Sheetflexos) • Asbestos Decorative Walltile • Asbestos-Cement Structural Board and Sheathing • K & M Mineral Wool Insulations for the home.

Underline the products on which you want full information and mail this coupon today.

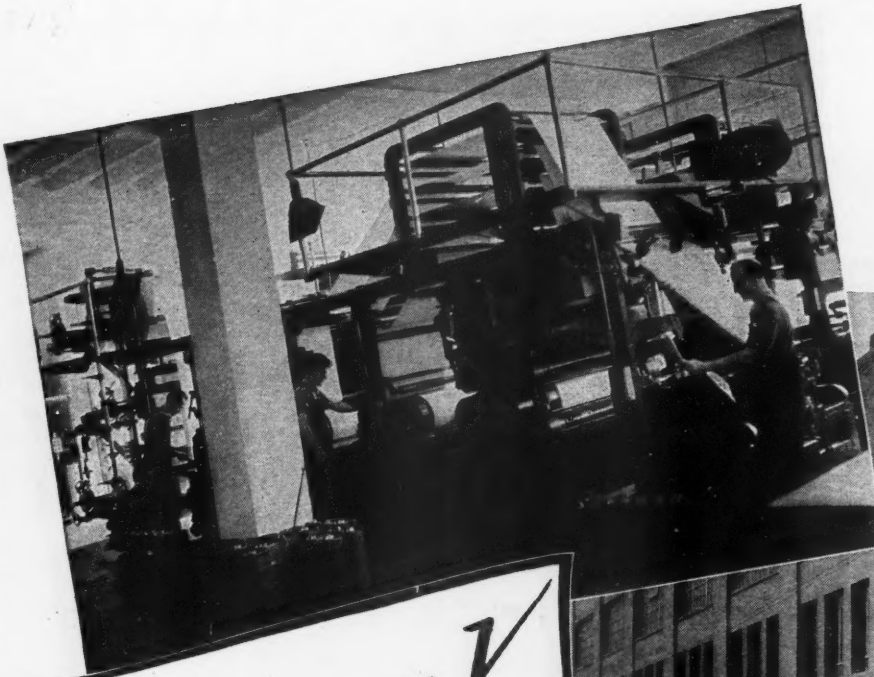
Name

Name of Firm

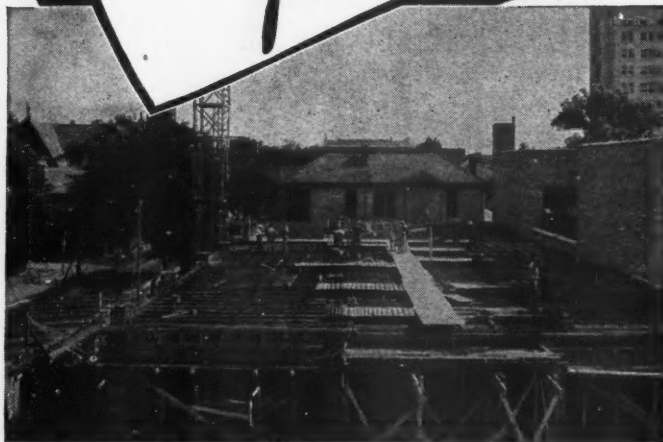
Address  1-4

**KEASBEY & MATTISON COMPANY**  
AMBLER, PENNA.





*Minimum ✓  
form cost ✓  
Lower overhead ✓  
Quicker completion ✓*



**STATE-TIMES-MORNING  
ADVOCATE**

Baton Rouge, La.

Architect: Lewis A. Grosz  
General Contractor: L. W. Eaton  
Supt.: J. E. Sobers  
Foreman: W. A. Montgomery



On every concrete job, large or small, there is opportunity to get results like these with Lehigh Early Strength Cement. In 24 to 48 hours, used under the same conditions, its strength compares with that of normal portland cement at seven days.

For the new Baton Rouge State Times and Advocate Building, quick service concrete enabled the contractor to get along with only one set of forms. Floors were put to quick use for working bases. Plumbers, electricians and machinery men were able to get on to the job with no long waiting. The whole job was completed and turned over to the owner in much shorter time than would have been the case with slower curing concrete. For every day saved in construction time, the contractor saved on overhead expenses.

Use Lehigh Early Strength Cement for these same time and money saving advantages on any kind of building or repairs. Its quick curing is also a big advantage in changeable weather—it is a safeguard against the frosty nights of early spring.

The Lehigh 32-page book will give you many more ideas of the advantages of Lehigh Early Strength Cement for all kinds of jobs. Send for a copy.

**LEHIGH PORTLAND CEMENT COMPANY**  
Allentown, Pa. Chicago, Ill. Spokane, Wash.

**LEHIGH EARLY  
STRENGTH CEMENT**



## STANLEY "Roll-up" GARAGE DOORS

ADD A

## BIG SELLING FEATURE



When you are building houses for resale, a small expenditure for Stanley "Roll-Up" Garage Doors will help you clinch sales. Their fine appearance, convenience, and trouble-free operation will appeal to your prospects. No sticking, no jamming, no banging in the wind — a slight lift starts the door, heavy coil springs roll it up into position; works even when

snow-banked. They remain care-free for the life of the garage on which they are installed.

You will like Stanley "Roll-Up" Doors for their easy, quick installation and the fact that even a modest allowance can include this modern equipment. Today . . . ask your local Stanley Dealer for the details. The Stanley Works, New Britain, Connecticut.

# STANLEY

H A R D W A R E F O R C A R E F R E E D O O R S



## *Calumet Farm* LEXINGTON, KENTUCKY

RESIDENCE OF WARREN WRIGHT  
R. W. McMEekin . . . . ARCHITECT  
GENERAL ELECTRIC OIL FURNACES &  
YEAR 'ROUND AIR CONDITIONING

Both the residence and the offices of the adjoining stud farm are equipped with General Electric Oil Furnaces and year 'round Air Conditioning.

One of the principal features of this unique and complete installation, is that both the master quarters, and the servants quarters of this residence have individual temperature controls. This arrangement results in economy and convenience of operation and avoids transfer of odors and sound.

Adapted to meet all the requirements of this fine home, the installation was engineered with the same care and attention that typifies all G-E Air Conditioning installations.

# GENERAL ELECTRIC

*Automatic Heating and Air Conditioning*

OIL FURNACES • GAS FURNACES • WINTER AND SUMMER AIR CONDITIONING

193  
bee  
cos  
For  
refi  
T  
mar  
ord  
pov  
134  
of e  
the  
112

## MORE PAY IN EVERY PAYLOAD FOR BUILDERS



1938 Ford V-8 Trucks and Commercial Cars have been built to do more work, in less time, at lower cost. Time-proved features, including the famous Ford V-8 engine and the 1938 improvements and refinements, put more pay in every payload.

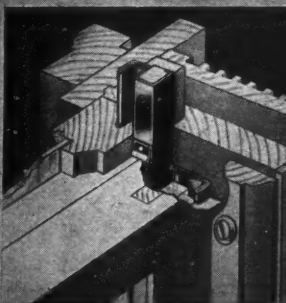
The Ford V-8 engine is speeding up work for many companies—it continues to roll up new records for performance and economy. The 85-horsepower Ford V-8 Truck engine powers the new 134-inch and 157-inch wheelbase trucks. A choice of either the “85” or “60” V-8 engine is offered in the new 122-inch wheelbase one-ton trucks and the 112-inch wheelbase commercial cars.

The Ford Engine and Parts Exchange Plan is another reason why owners find Ford units profitable and economical to operate. When an overhaul does become necessary, this plan saves time and money—keeps units on the job.

The nearest Ford dealer will lend you a 1938 Ford V-8 Truck or Commercial Car without charge or obligation to make an “on-the-job” test with your own loads and your own driver.

## FORD V-8 TRUCKS AND COMMERCIAL CARS





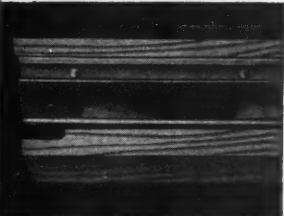
**Section Through Jamb.** Showing the new duplex action Silver-Seal weatherstripping with both rib and spring metal contacts. Sash slide smoothly at all times because they are guided by the ribs, and are centered between the Spring-leaf weatherstrips. One-piece wide blind stop makes weathertight joining between frame and wall.



**Section Through Check Rail.** Note the NEW three-piece weatherstrip with concealed nailing and spring leaf metal-to-metal contact.



**Section Through Bottom Rail** showing the improved fold back spring leaf weatherstrip. Self-cleaning, self-adjusting, out of sight when sash is open.



**No Exposed End Wood.** New joint at bottom rail greatly reduces end wood which is completely covered with weatherstrip metal.



**Specially Designed Flat Weights** eliminate waste space and permit narrow mullions and trim because 1 flat weight with pulley wheel replaces 2 ordinary round weights.

**YOU'VE CERTAINLY GOT  
SOMETHING IN THE NEW  
ANDERSEN NARROLINE  
WINDOW - It Can't Be Beat!**

Contractors, builders and architects all over America are praising the NEW Improved Andersen Narroline Double-hung window... its more attractive appearance... its more efficient operation.



**NEW SILVER-SEAL WEATHERSTRIPS** are of strong, attractive aluminum alloy. Maximum weathertightness and *easy sash* operation assured by New duplex principle. (Patent Pending)

**FITTED SASH 1½" THICK.** A great improvement. Stronger. No exposed end wood in bottom rails.

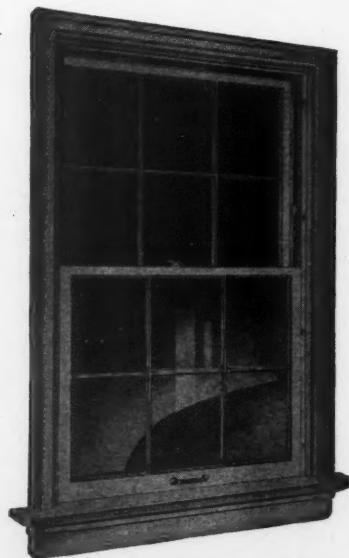
**FLAT WEIGHT COUNTERBALANCING** assures trouble-free sash operation under all conditions.

## EASY TO INSTALL!

Sash are completely fitted and ready to install with check and bottom rail weatherstrips applied. Side and head weatherstrips are furnished ready to slip in place without danger of crimping or other damage.

Both frame and window are permanently protected against moisture, termites and decay with Andersen Superior Preservative treatment. Thorough penetration is assured by full three minute processing.

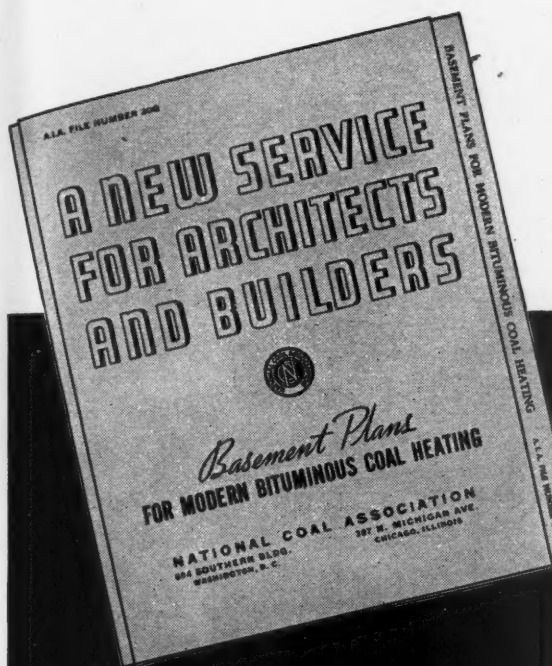
**NOTE TO DEALERS**—Ask your jobber to show you sectional model of the NEW Andersen Narroline Window.



**Andersen NARROLINE**

COMPLETE DOUBLE HUNG WINDOWS  
READY TO INSTALL WITH PRE-FITTED SASH

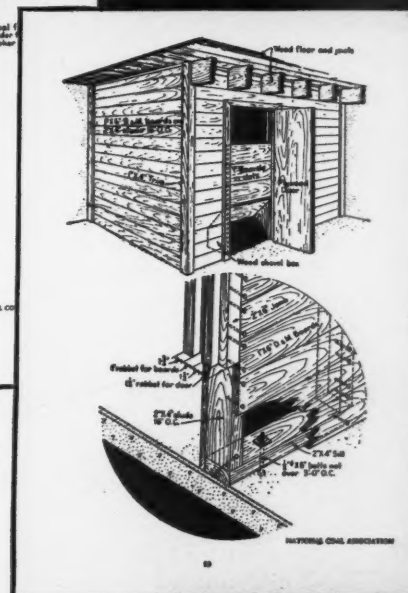
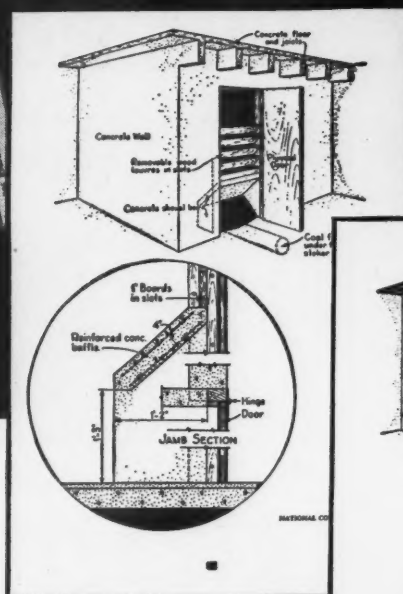
# How to build the Coal Bin Right -



● Coal bins have gone modern just like other home features. No longer are they oddly shaped structures, built loosely of rough lumber as an afterthought.

Plans and construction details of such modern enclosed coal bins of concrete, hollow tile, lumber and plywood are shown in our booklet, "Basement Plans for Modern Bituminous Coal Heating," A. I. A. File 30-G.

Send for your free copy of this booklet. It will make it easier for you to plan homes that give their owners the great advantages of the even heat, great economy, complete dependability and clean-



liness of modern bituminous coal or coke heating. It will also help you plan basements for automatic furnace firing with bituminous coal, thereby giving your clients the degree of convenience which they desire while retaining all the superiorities in economy, health and comfort of modern bituminous coal.

## NATIONAL COAL ASSOCIATION

Copyright—National Coal Association, 1938

### NATIONAL COAL ASSOCIATION—The National Organization of Bituminous Coal Operators

804 Southern Bldg., WASHINGTON, D. C.—307 N. Michigan Ave., CHICAGO, ILLINOIS

Please send me a set of "Six Typical Basement Designs for Modern Bituminous Coal Heating," A. I. A. File 30-G. I understand there is no obligation involved.

Name..... Firm.....

Street..... City..... State.....

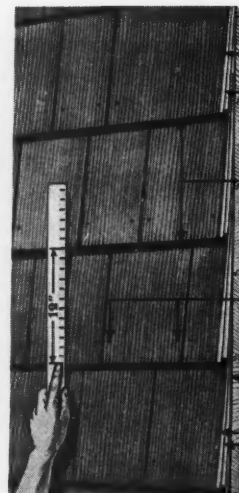
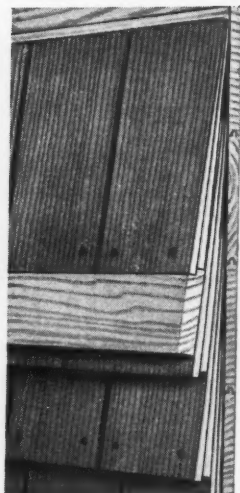
AB-4





## DOUBLE-COURSING on Side Walls ... with RED CEDAR SHINGLES

By using rabbeted guide ... double-coursing becomes easy.



No. 1 Shingle Top Course  
No. 2 or No. 3 Shingle Under-Course

WEATHER EXPOSURES  
12" for 16" Shingles  
14" for 18" Shingles  
16" for 24" Shingles

Two Nails to a Shingle,  
nailed 2" above Butt-line  
and 3/4" from edge

Building Paper

Outer-Course 1/2" lower  
than Under-Course

By the utilization of No. 2 or 3 Certigrade Cedar Shingles under No. 1 grade, the wide weather exposure makes it possible to double-course a side wall at no greater cost than the old-fashioned single coursing with the lesser exposure.

The result is a more substantial wall, much greater insulation, and deeper and more beautiful shadow lines.

The formula for figuring cost of double-coursing is to add price of upper and under

courses, multiply by \*standard weather exposure and divide by \*exposure to be used. For example:

Price 16" No. 1 Shingle \$5.50 per square  
Price 16" No. 3 Shingle \$4.00 per square

**\$9.50**

Multiply \$9.50 by \*5, equaling \$47.50; then divide this \$47.50 by \*11, equaling \$4.32. This \$4.32 is the total price per 100 square feet.



This Certigrade Cedar Shingle Handbook, prepared by a wood technologist, mailed free on request. One hundred pages detailing the uses, application and technical data. Write the Red Cedar Shingle Bureau, Seattle, Wash., U.S.A., or Vancouver, B. C., Canada.

The F. H. A. Offers Protective Features  
Tending To Safeguard Building Investments

# CERTIGRADE

## Red Cedar Shingles

Certigrades pass official inspection for grade and quality

Sold only by established lumber dealers



# CHEVROLET TRUCKS

again prove their great performance  
and economy by this A.A.A.  
CERTIFIED TEST RUN



SANCTION No. 3562




1938 1½-ton stock model Chevrolet truck demonstrates cost-saving performance in test run from the capital of Canada to the capital of Mexico

less than  
⅓ CENT PER  
TON MILE

14.48 MILES  
PER GALLON  
of gasoline

NOT ONE  
CENT FOR  
REPAIRS

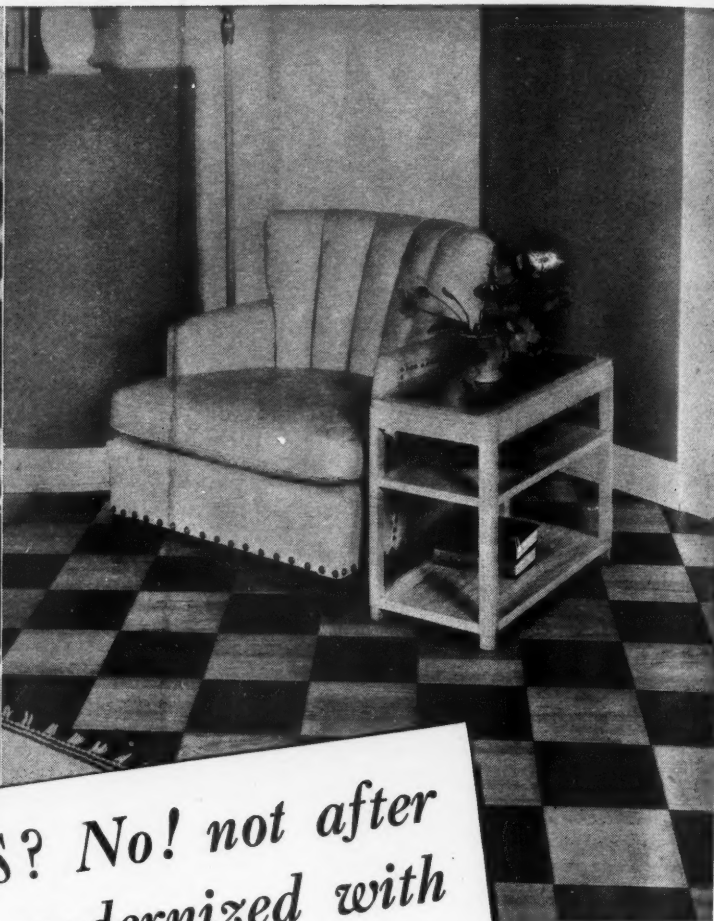
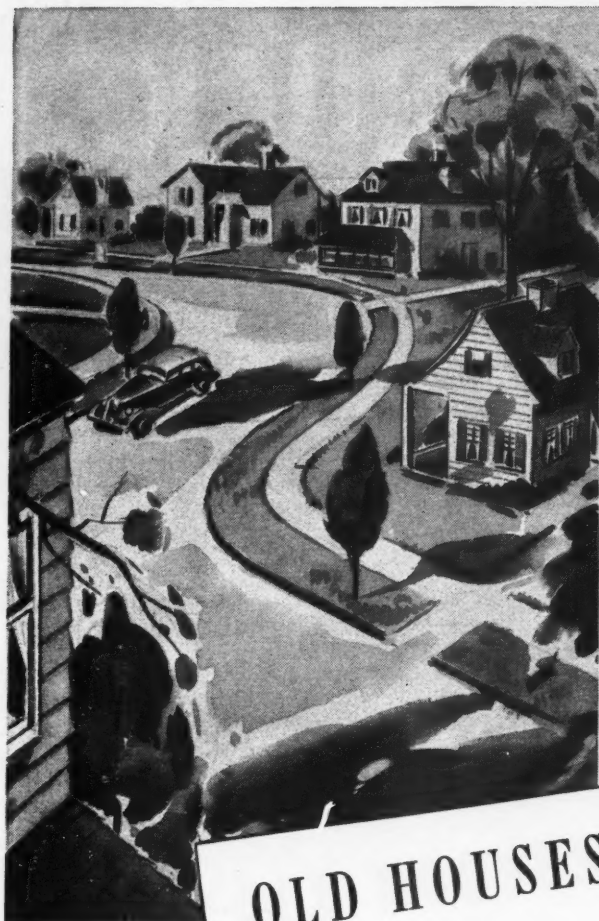
 No tests are more rigidly supervised and exacting than tests conducted under the supervision of the Contest Board of the American Automobile Association. All figures listed in the column at the right are *facts*—certified and convincing proof of the great performance qualities and dollar-saving economy of Chevrolet trucks! Modernize your truck equipment now. Save money *all ways* with Chevrolet trucks—with low first cost, low operating cost, low maintenance expense—and with rugged, durable Chevrolet construction that gives extra thousands of miles of capable, satisfying operation. CHEVROLET MOTOR DIVISION, General Motors Sales Corporation, DETROIT, MICHIGAN  
General Motors Instalment Plan—Convenient, Economical Monthly Payments.  
A General Motors Value.

## READ THESE AMAZING PERFORMANCE FACTS...

Total mileage covered... 3,022.2 miles  
Payload weight..... 4,590 lb.  
Gross weight..... 9,260 lb.  
Average speed..... 31.04 m.p.h.  
Total gasoline consumed, 208.73 gallons  
Miles per gallon of gasoline..... 14.48  
Oil consumed..... 2.92 quarts  
Total cost (gas, oil, lubrication) \$.43.84  
Total per ton-mile cost..... \$.00313

"THE THRIFT-CARRIERS FOR THE NATION"





**OLD HOUSES? No! not after  
they've been modernized with  
PATTERNED HARDWOOD FLOORS**

Have you discovered how to modernize old homes with Patterned Hardwood—the smart, parquet-type flooring? It's the simplest, most practical way there is to completely transform an interior. Hundreds of contractors have done it and won the praise of their customers.

Patterned Hardwood Floors of Bruce Finished Blocks harmonize with any style of room design—fit all types of architecture. Always, they enhance room beauty with the natural charm of hardwood *plus* their modern block pattern *and* the superior factory-applied finish.

Bruce Finished Blocks are easily nailed over wood sub-floors or laid in mastic over concrete, and are ready to use as soon as they are in place. This simple application and

their *prefinished* feature make them ideal to use over old floors—save your time and eliminate inconvenience to homeowners. (Note: A special  $\frac{1}{2}$ " thick Bruce Block is just the thing for modernization work, and about 25% lower in cost than the standard  $25/32$ " thickness.)

National advertising has helped contractors sell many Bruce Block jobs—not only in old and new homes, but also in schools, offices, apartments, hotels, etc.

See your Bruce dealer for leads, and send this coupon to us for your free copy of the big new book, "Patterned Hardwood Floors for Distinctive Decoration and Lasting Beauty." It's profusely illustrated—the most complete book on hardwood flooring ever printed.

**E. L. BRUCE CO., Memphis, Tenn.**



FINISHED  
HARDWOOD  
BLOCKS

**OTHER BRUCE PRODUCTS**

HARDWOOD STRIP FLOORING

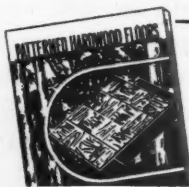
SOLID OAK FLOOR PLANKS • BRUCE FLOOR FINISHES

MOULDING AND TRIM • YELLOW PINE

SOUTHERN HARDWOODS • HARDWOOD DIMENSION

CEDA' LINE • BRUCE PRESERVATIVES

TERMINIX



SEND THE COUPON FOR  
YOUR COPY OF THIS  
NEW BOOK

**E. L. BRUCE CO.**  
Dept. AB-4, Memphis, Tenn.

Please send a free copy of "PATTERNED  
HARDWOOD FLOORS—for Distinctive Decoration  
and Lasting Floor Beauty."

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Address.....

City..... State.....

My lumber dealer is.....

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